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Developing Clinical Indicators for Needed Skilled Nursing Facility Care: A Feasibility Assessment

A study conducted by
Mathematica Policy Research, Inc. for the
Medicare Payment Advisory Commission

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Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, NJ 08543

MedPAC
1730 K Street, NW
Suite 800
Washington, DC 20006
(202) 653-7220
Fax: (202) 653-7238
www.medpac.gov

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Developing Clinical Indicators for Needed Skilled Nursing Facility Care: A Feasibility Assessment

Final Report

January 2001

Robert Schmitz
Arnold Chen
Nancy Archibald

Submitted to:

Medicare Payment Advisory Commission
1730 K Street NW, Suite 800
Washington DC 20006

Submitted by:

Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, NJ 08543-2393
(609) 799-3535

Project Officer:
Raymond Wedgeworth

Project Director:
Robert J Schmitz

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EXECUTIVE SUMMARY

The lack of data and consensus among researchers regarding appropriate discharge to Medicare skilled nursing facility (SNF) care hampers the construction of sharply defined measures of access to clinically needed care that could apply to the entire Medicare population. In our view, no such measures are likely to be developed in the foreseeable future. This does not mean that measures are wholly unavailable, but rather that some compromises are necessary to justify them. We base these conclusions on a review of administrative data sources and published guidelines for care of patients often discharged to SNFs on interviews with experts in postacute care.

ADMINISTRATIVE DATA

Administrative databases that describe care received by Medicare beneficiaries are easy to access and use, but generally provide limited information that characterizes people's medical condition and functional abilities. These limitations result from the origin of the data in Medicare claims, which naturally emphasize information relevant for eligibility and payment rather than treatment. Data sources and locations are shown below:

- ***Medicare Hospital Claims.*** These are available for all Medicare-covered inpatient stays. The claims record includes dates of admission and discharge, a Diagnosis-Related Group (DRG) code, as many as 10 ICD-9-CM diagnostic codes, and surgical procedure codes. Because a three-day hospital stay is required to establish eligibility for Medicare SNF coverage, the hospital claims records are crucial to ascertaining the population at risk for a Medicare-covered SNF stay. *Location: HCFA Data Center.*

- ***Medicare SNF Claims.*** SNF claims are available for all Medicare-covered days in SNFs. The claims record includes dates of Medicare admission and discharge (although the beneficiary may remain in the facility after Medicare discharge); the Resource Utilization Group-III (RUG-III) classification; as many as 10 ICD-9-CM diagnostic codes; units of physical, occupational, and speech therapy; and amounts of ancillary services such as pharmacy, laboratory, respiratory therapy, and supplies. *Location: HCFA Data Center.*

- ***Provider of Service (POS) File.*** The POS file contains information describing all Medicare-certified hospitals, SNFs, rehabilitation facilities, long term care hospitals, and the like. For SNFs, the POS file includes information on the number of certified SNF beds and whether the SNF is for-profit, nonprofit, or government-owned; hospital-based or freestanding; or chain or independent. *Location: HCFA Data Center.*

- ***Home Health Agency (HHA) and Rehabilitation Facility Claims.*** Claims for home health and rehabilitation facility care are essential to proper study of SNF access, because these two forms of care are the closest substitutes for care provided by SNFs. Home health claims provide ICD-9-CM diagnostic codes and the number of home health visits by type during the billing period. Rehabilitation facility claims contain dates of admission and discharge;

Medicare-covered days; units of physical, occupational, and speech therapy; and ICD-9-CM diagnostic codes. *Location: HCFA Data Center.*

- ***Nursing Home Minimum Data Set (MDS).*** The MDS is a rich source of information describing the medical diagnoses; cognitive, functional, and nutritional status; patterns of mood and behavior; hearing; vision; continence; medical complexities (including balance, cardiopulmonary function, fluid status, pressure ulcers, and skin integrity); therapy; and other treatments received. Facilities are required to complete the MDS within seven days of admission for any beneficiary entering a Medicare-covered SNF stay and again by days 14, 30, 60, and 90 of the SNF stay. No comparable information is available for persons not entering a nursing home. *Location: National MDS Repository.*

Some variables commonly cited as crucial in determining appropriate SNF placement do not appear in these data files. The presence of a capable informal caregiver at home, the safety and physical layout of that home, and the availability of transportation from home to physician office or clinic cannot be ascertained from these data. Other important information, such as cognitive and functional status, can sometimes be inferred from the presence of primary or secondary diagnoses of dementia, hip fracture, Parkinson's disease, or amputation. Such diagnoses may be reliable indications of cognitive or functional impairment when they appear. Their absence, however, may be poor evidence that the beneficiary is free of these limitations.

Important information describing health and functional status, postacute care requirements, family and community support, and need for continuing care would become available if the Uniform Needs Assessment Instrument (UNAI) were adopted for all beneficiaries discharged from the hospital. A uniform needs assessment instrument was mandated by OBRA 1986 as one means of improving hospital discharge planning. The UNAI has been under development at HCFA for several years, and some field testing has been completed. However, there appear to be no plans to implement the instrument in the near future.

CLINICAL GUIDELINES FOR POSTACUTE CARE

We reviewed practice guidelines for postacute care for nine conditions commonly found among Medicare beneficiaries discharged from hospital: hip fracture, stroke, congestive heart failure, diabetes, pneumonia, urinary incontinence, pressure ulcers, depression, and pain. No guidelines recommended a particular setting for post-hospital care.

Guidelines tended to vary markedly in their specificity and detail. The most specific recommendations generally referred to the use of appropriate medications for given symptoms. For example, the American Heart Association's guideline for care of stroke patients recommends, "For patients with TIA or mild stroke who have mild carotid artery stenosis (less than 50 percent) and do not have atrial fibrillation, treatment with a daily dose of 50 to 325 mg of aspirin is of demonstrated benefit" (Wolf et al. 1999).

Most of the recommendations contained in the reviewed guidelines, however, were either quite general, such as those that suggest physical, occupational, and speech and language therapy for stroke patients, or required information that does not typically appear in administrative data.

Guidelines for treatment of pressure ulcers published by the Agency for Health Care Policy and Research (now the Agency for Health Care Research and Quality), for example, call for debridement of necrotic tissue, avoidance of antiseptic agents, and selection of a dressing to keep the wound continuously moist (U.S. Department of Health and Human Services 1994b). Although the patient's clinical record probably would contain information necessary to verify compliance with this recommendation, neither the MDS nor any other administrative data set contains sufficient detail to do so.

ACCESS TO SNF CARE

No combination of administrative data (or any other data) and accepted guidelines will support sharply defined measures of access to a SNF. As we have seen, existing guidelines recommend appropriate treatments, but not settings. Moreover, there are no widely accepted guidelines or principles relating the health and functional status of individuals and the availability of informal care to a recommended setting for postacute care. Nevertheless, some of the experts interviewed for the project asserted that it might be possible to specify one or more profiles that defined persons who were highly likely to require SNF care after hospital discharge. Although no one offered a precise definition, many were willing to specify configurations of diagnoses, age, and historical treatment patterns as likely to require SNF care in a high proportion of cases. One expert, for example, argued that persons aged 80 and over who were hospitalized one or more times in the previous six months and are currently hospitalized for diagnoses such as stroke or heart failure, and whose hospital length of stay exceeded 10 days, should probably be discharged to SNF care. Such an assertion is, of course, an educated judgment. An unknown number of such persons will manage quite well at home. Nevertheless, it is probably reasonable to regard periodic variations in the number of these beneficiaries who receive SNF care as a defensible measure of access.

Many of the characteristics cited by experts can be extracted from a search of Medicare hospital claims, although a few are sure to be problematic. Two elements in particular, "lack of caregivers" and "functional changes," are most unlikely to be identified through administrative data. Indicators of dementia may appear as secondary diagnoses, though, as mentioned before, they may not be coded in many instances in which dementia is actually present.

At this point, there is no accurate means of estimating how many beneficiaries in a given quarter or year are represented by the patient profiles developed on the basis of interviews with experts. That would be determined only after constructing some or all of the profiles themselves. Before undertaking this task, however, it would be necessary to define the elements of the profiles more precisely than they appear here. The profiles themselves were in most cases developed during telephone conversations and so have an informal quality. One or more meetings of physicians and other experts would be required in order to achieve consensus and clarity about the profiles.

Not all the experts agreed that administrative data could be used to create any useful criteria for beneficiaries who should be properly discharged to a SNF. These experts made three arguments. First, they asserted that the number and complexity of clinical and physical conditions, combined with variations in the will and personal makeup of the patients themselves, make it impossible to draw valid conclusions about the appropriateness of SNF placement from administrative data. Thus, they claim that there can be no simple path fabricated from the few variables that happen to appear in administrative data sets to the conclusion that a person ought to be discharged to a SNF. Second, the experts argued that the clinical information extracted from administrative databases, which forms the basis for existing clinical guidelines for postacute care, is far less important than nonclinical factors such as caregiver availability and the nature of the home environment in determining appropriate postacute placement. Third, they asserted that SNFs themselves vary immensely in their services and programs. Some provide highly sophisticated care; others provide little beyond routine therapy and nurse monitoring. Hence, the notion of a "necessary SNF admission" is too imprecise to be useful.

A few experts suggested analyses of access to SNF using what we might describe as *relative measures.* Several of the experts we interviewed suggested measuring changes in access resulting from the implementation of a prospective payment system for Medicare SNF care by comparing the admitting patterns of hospital-based SNFs or SNFs that were part of an integrated system with SNFs that were not part of such systems. Under PPS, a freestanding SNF with available beds will admit a new resident so long as the per diem payment exceeds the expected cost of care. A hospital-based SNF or a SNF that is part of an integrated system will follow the same rule when considering admission of a patient from a hospital outside the system. Both hospital-based SNFs and SNFs that are part of networks, however, will follow a different rule when considering the admission of a patient from a hospital in the same system. They will admit the patient if the expected daily cost of care in the SNF is less than the expected daily cost of remaining in the hospital, since this maximizes revenue net of cost for the system as a whole. Because hospitals are more expensive than SNFs, this latter condition will nearly always be true. Therefore, if PPS impeded the access of Medicare beneficiaries to SNF care, then we expect to observe a greater increase or smaller decline from the period before PPS to a chosen year after PPS, in the number of Medicare discharges from hospitals to SNFs in the same system than from hospitals to unrelated SNFs.

Whether this measure could be implemented using administrative data is an open question. The Medicare POS file indicates whether a provider is part of a multi-facility organization. It does not, however, indicate the nature of that organization, so identifying hospitals and SNFs that are part of the same system may well be impossible with Medicare administrative data as it is currently organized.

Another expert suggested creating an analytic file of five percent of beneficiaries hospitalized within broad groups such as Major Diagnostic Categories. By monitoring the proportion of beneficiaries within each group (further categorized by age and geographic area) admitted to a SNF or to either a SNF or a rehabilitation facility, a rough indicator of access might be derived.

ACCESS TO NEEDED CARE DURING SNF STAYS

We argue that there is no sharp distinction between measures of access to care within SNFs and measures of the quality of care furnished by SNFs. Thus one might attribute the failure to provide a service or treatment recommended by clinical guidelines to poor access to care or to poor quality of care, depending on one's inclination. We make no attempt to resolve the matter here and indeed do not believe a resolution is possible at this point.

Access to Services Within SNFs. Our review of clinical standards and guidelines identified certain recommendations for postacute care that might be verified using either the nursing home MDS or Medicare SNF claims retrieved from the National Claims History File. The recommendations appearing in our review of clinical guidelines represent less than one-half of all recommendations identified. The rest cannot be verified with any available data source other than the resident's medical record. Recommendations that can be verified through administrative data tend to be fairly general. Knowing that physical or occupational therapy has been provided or that a plan for protecting skin integrity or for ensuring proper nutrition exists provides little information about the nature of care received by the resident.

Outcome Measures. It is natural to surmise, as many have, that if SNFs do not provide appropriate treatments and services, poorer resident outcomes will result. This assumption underlies the increased emphasis on outcomes in HCFA's nursing home survey process. We present in Chapter III a set of measures, each of which can be extracted from MDS and Medicare SNF or hospital claims. The measures were developed a priori and have not been validated or tested. Still other measures, listed in Chapter IV, were suggested by experts interviewed by project staff.

The quality of SNF care is monitored by state agencies that implement a survey process that HCFA developed. In its effort to hold facilities properly responsible for resident outcomes, HCFA has continued to support the development of measures of facility quality based on the MDS. These are measures of adverse resident outcomes that might arguably be linked to inadequate or poor-quality care. The first such measures to be used as part of the survey process are the so-called quality indicators (QIs) constructed by the Center for Health Systems Research and Analysis (CHSRA) at the University of Wisconsin. The measures are not intended to be indicators of poor quality of care but rather are meant to direct the attention of state nursing home surveyors to elements of facility practice that may require further investigation. Nor are the measures linked to any specific services or treatment that may be performed infrequently or inadequately. Although the QIs are themselves facility-level measures, they suggest obvious person-level counterparts.

Using outcomes as an indicator for incomplete access to clinically appropriate services in SNFs is an appealing strategy and was suggested by several of the experts we interviewed. Improved (or acceptable) outcomes are, after all, the main impetus for concern about access to necessary care. Nevertheless, we believe that few accurate inferences can be drawn from observed variation in health outcomes. The complex interactions linking the natural progression of disease and debilitation in elderly people, the configuration of clinical and other services provided, and observed outcomes are not fully understood. Risk adjustment is consequently imprecise at best. For this reason, even the best-researched quality indicators, the CHSRA QIs, are computed at the facility, not the individual, level. In many cases, they are not risk adjusted, and in no instances are they linked to the provision or lack of provision of specific services.

I. INTRODUCTION

The new prospective payment system (PPS) for Medicare skilled nursing facilities (SNFs), the anticipated introduction of prospective payment for Medicare home health care in October 2000, and similar systems for rehabilitation facilities and long term care hospitals expected to follow have generated turmoil among providers of postacute care. Many providers and trade associations have alleged that the casemix systems, meant to ensure that payment is consistent with the expected financial burden of care, are seriously defective and that certain patients may find it difficult to obtain the care they need. The American Health Care Association, for example, citing Kramer et al. (1999), claims that version III of Resource Utilization Groups (RUG-III), the system used to adjust Medicare SNF payments, does not account properly for costs associated with the care of persons with complex medical conditions.

PPS sharply increased the financial risk borne by providers. Though per diem revenue for each resident is known once a casemix category is assigned, cost is not, and providers must manage it carefully to earn a profit or avoid losses. Congress mandated prospective payment systems for the Medicare program to promote efficiency and to eliminate an unfortunate consequence of cost-reimbursement: the incentive to overprovide services. All the same, the *actual* incentive created by PPS is to reduce cost. Although we may hope that providers will reduce cost by improving efficiency (that is, by reducing services that are not needed or by finding ways to provide needed services at lower cost), there is no guarantee that providers will not simply reduce services, regardless of whether these services are needed or appropriate. The possibility that clinically needed services could be curtailed threatens the well-being of Medicare beneficiaries.

These concerns are of special interest to the Medicare Payment Advisory Commission (MedPAC). Created by the Balanced Budget Act of 1997 (BBA), MedPAC has a congressional mandate to assess the effects of changes in Medicare payment policies on beneficiaries' access to care and on the quality of that care. Developing effective methods to monitor the consequences of SNF PPS on these care issues is thus crucial to MedPAC.

A. BACKGROUND

MedPAC sponsored this study as a preliminary investigation into developing a new method for monitoring Medicare beneficiaries' access to Medicare-covered SNF care. The goals of the project were to seek evidence or consensus to support the formulation of clinically based indicators of access to necessary SNF care and to ascertain whether such indicators could be implemented using administrative data. Before examining the notion of access in greater detail, we first expand on four key terms from the discussion above: (1) Medicare-covered SNF care, (2) clinically based indicators, (3) access to necessary SNF care, and (4) implementation in administrative data.

1. Medicare-Covered SNF Care

Because MedPAC's task is to monitor the Medicare program, the current study focuses only on SNF stays covered under the Medicare SNF benefit. Medicare covers up to 100 days of SNF care. It pays for all covered costs for the first 20 days of a stay; pays for all but $97 per day for the 21st to the 100th days, with the beneficiary paying the $97; and provides no coverage from the 100th day onward.[1] To qualify for the benefit, beneficiaries must have had a 72-hour acute hospital stay within the 30 days preceding the SNF stay and must require daily skilled care that, "as a practical matter," can be provided only in a SNF.[2] Skilled care is care that only nurses or physical, occupational, or speech therapists as opposed to untrained or nonprofessional persons are able to provide. Medicare's SNF benefit thus covers only short-term skilled nursing, therapy, and rehabilitative care immediately subsequent to an acute hospital stay (so-called *postacute*, or sometimes *subacute, care*), and it is on this type of SNF care that the current study focuses.[3]

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[1] Technically, these periods refer to a "benefit period," not a stay. A benefit period starts on the first day of a hospitalization and ends when the beneficiary has not received any acute hospital or *skilled* care (even if he or she continues to reside in a SNF) for a period of 60

2. Clinically Based Indicators

In order to study whether access is limited, services are underprovided, or quality of care is substandard, we must identify clinically based indicators to define minimum standards. These indicators would specify which beneficiaries should receive what services, as well as the adverse outcomes that might result from inadequate access to care or poor-quality care. The indicators could offer a way to monitor beneficiary access and quality of care that is better than traditional tracking of changes in total SNF utilization. The traditional method does not give policymakers any information on the appropriateness or desirability of these trends, nor does it indicate whether beneficiaries most in need of services are receiving them, or what the quality of services is. Furthermore, the clinical basis of these indicators is independent of any specific reimbursement system.

(continued)
consecutive days. After a benefit period has ended, a new benefit period may start with another hospitalization. Beneficiaries are entitled to an unlimited number of benefit periods.

[2] The following somewhat ambiguous language for physician certification used by one large Medicare fiscal intermediary is typical: "I certify that posthospital SNF care (skilled nursing and/or skilled rehab) is required on behalf of the above-named patient that, as a practical matter, can be provided only in a SNF. The SNF care is needed for a condition for which the individual received inpatient care in a [Medicare] participating hospital."

[3] Other types of Medicare postacute care are home health care and rehabilitation ("rehab") hospitals.

3. Access to Needed SNF Care

"Access needed SNF care" refers to both the types of access and the standard of care on which this study focused. We were interested in two types of access: (1) how often beneficiaries who need to be in a SNF are admitted to one, and (2) how often beneficiaries who are in SNFs receive the care they need. These two concepts are typically called "access to care" and "quality of care," respectively, and are viewed separately. However, because both elements are required in order for beneficiaries to achieve the best possible health outcomes, in this project, we embody both in the single word "access."

The term "needed SNF care" specifies our interest in a minimally acceptable standard of care, as opposed to "gold standard" or optimal care. Given our interest in detecting possible underuse of health care, it is appropriate for us to focus on this minimum threshold. Our concept of needed care is derived from a definition developed by researchers at the RAND Corporation (who called it "necessary care"): care that is *obligatory* or *crucial* for health care providers to recommend or, conversely, care that would be *improper* for providers *not* to recommend.[4] Patients who do not receive necessary care are highly likely to suffer harm or adverse events (Kahan et al. 1994).[5] Note that, according to this definition, care can be appropriate (care that *could* reasonably be provided) without being necessary (care that *must* be provided).[6]

Access to needed care can thus be measured in two ways. The first is measurement of the actual rates of delivery of care deemed to be clinically necessary—that is, measurements of the process of care. An example would be the percentage of diabetic patients receiving an annual eye examination. The second is measurement of adverse events that are preventable through provision of necessary care—that is, measures of the outcomes of care. An example would be hospital admissions for diabetic coma.[7]

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[4] Throughout this report, we will use the words "needed" and "necessary" interchangeably.

[5] Of course, patients are always free to refuse to follow any recommendations for care.

[6] Briefly, appropriate care in the RAND framework is care for which the expected health benefits exceed the expected health risks (Brook et al. 1986).

4. Implementing Clinically Based Indicators in Administrative Data

By "administrative data," we mean data that Medicare or SNFs routinely collect for payment, regulatory, or certification purposes. The advantages of using administrative data are that they are kept up-to-date, cover all Medicare beneficiaries and SNFs nationwide, and are readily available. The application of clinically based indicators to administrative data could thus form the basis of an ongoing, national monitoring system. The disadvantages are that data systems that have not been designed for clinical purposes are unlikely to capture many of the sociodemographic, functional, and clinical data elements that clinicians most often find important.

B. ACCESS AND MEASURES OF ACCESS

The word "access" typically conveys a sense of civic right or institutional responsibility. Thus we speak of access to education, clean drinking water, or health care, but not to air conditioning, automobile service, or seats at professional basketball games. When used in connection with health care, access often implies the presence or absence of health insurance. Since all Medicare beneficiaries are eligible for the same package of benefits, the question of access to health care refers not to insurance, but rather to other barriers of obtaining care. These include most prominently Medicare payment rates that providers may regard as too low, a limited (or even nonexistent) supply of providers in a given locality, or other barriers such as lack of transportation or inability to pay co-insurance. We shall return to this issue shortly, after treating the concept of access used here.

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[7] These two examples of care for diabetes were taken from a study similar in purpose to the current one, commissioned by a MedPAC precursor agency, the Physician Payment Review Commission (PPRC) (1995). That study developed several indicators of necessary physician care that could be implemented in Medicare claims data as a way of tracking the effects of policy changes to Medicare's physician payment system.

Whether people are able to obtain care is best ascertained through surveys that inquire about the ease and difficulties in obtaining particular types of care. From the perspective of beneficiaries, the difficulties might include (1) a scarcity of providers near the person's residence and the consequent need to travel long distances for care, (2) long waits for appointments or beds, (3) the unwillingness of providers to accept payment from certain sources (for instance, Medicaid, Medicare, VA, HMO), or (4) individual limitations imposed by financial or other barriers.

Asking persons, providers, or discharge planners about the ability to obtain care is expensive and time-consuming and is therefore undertaken only occasionally. Far more common is gauging the ratio of people who are able to obtain care to people who actually *do* obtain care. The results are problematic, because some people who are able to obtain care do not do so because they procrastinate, do not want to "go to the trouble," or have an aversion to medical procedures. Thus, the number of persons who are observed to use care understates the number who are able to use care. Most empirical studies of access assume that this understatement is small and fairly consistent across groups and over time. If it is, then comparisons across groups or over time will tend to "difference out" the bias.

Most researchers regard the proper definition of "access" as bound to that of clinically needed care. A person with no cardiac symptoms who is denied a referral to a cardiologist by an HMO may not be receiving the health care services that he or she wants. However, whether that person should be regarded as lacking access to a cardiologist is not clear. Clinical need is nearly always a matter of medical judgment. An ideal measure of clinical need would link a person's diagnoses and medical acuity to a set of medically necessary procedures, treatments, and tests, through existing clinical guidelines developed by professional societies and research organizations. The procedures and treatments might then be compared to those actually received in order to construct a measure of access for that person. Because *clinical need* for care is compared to *observed care*, rather than to the *ability to obtain care,* we might term this hypothetical construct an "almost ideal" measure of access to care. This measure could be aggregated over people defined by their race, age, urban/rural residence, or medical condition to produce an overall measure of access for that group.

Although guidelines and clinical pathways have been developed for many conditions, their implementation nearly always requires a sophisticated understanding of the nuances of each patient's condition and an appreciation of secondary diagnoses and other limitations. Clinical guidelines may assist medical judgment but cannot replace it. At the level of the individual, guidelines and protocols can point the way to proper treatment but are unlikely to become sufficiently precise to support the almost ideal definition.

The inability to measure precisely the clinical need for care leaves the researchers with two alternatives. The first and more ambitious approach parallels closely the nearly ideal measure just described. It replaces the individual and deterministic focus of the nearly ideal measure with a probabilistic group focus. That is, it ignores the limitations of clinical guidelines and defines the expected or approximate clinical need for a group of people with a given diagnosis as the care recommended by the guidelines. The proportion of the total group who actually receive the recommended care is used as a measure of access. To our knowledge, this approach has been used to evaluate access to health care in the elderly population only for preventive services such as flu shots or mammograms. The approach is commonly used to study access to prenatal care (Kotelchuck 1994; and Kogan et al. 1998).

The measure resembles the almost ideal measure in that it is absolute. It compares care actually received to an external standard for care that should be received. However, it differs from the almost ideal measure in that it does not claim that each person in the group really ought to receive all the treatments specified in the guidelines. Rather, it accepts guidelines as sufficient, though not perfect, representations of needed care.

The effort to construct indicators of needed SNF care using administrative data has a precedent in the successful PPRC-sponsored Access to Care for the Elderly Project (ACE-PRO) (Asch et al. 1995 and 2000). In that project, researchers from RAND developed a method using Medicare claims data to measure beneficiaries' underuse of physician-directed necessary care.

The ACE-PRO investigators carefully and rigorously identified two types of access indicators: (1) medical procedures that are *necessary (or needed) care* for specific conditions or diagnoses, and (2) avoidable outcomes. The concept of necessary care (also pioneered by RAND researchers) has in turn been well-defined and validated. Necessary care is care for which (1) the benefits of the care outweigh the risks, (2) the benefits to the patient are likely and substantial, and (3) physicians have judged that not recommending the care would be improper (Kahan et al. 1994; and Bernstein et al. 1992).

Development of the indicators followed the well-known RAND expert consensus method (Brook 1995). Project staff selected medical conditions that are common among the elderly, can be treated effectively, and are identifiable in claims data. They then developed lists of proposed indicators for each condition and provided summaries of the available published evidence for each of the proposed indicators to members of an expert physician panel.[8] The panelists reached consensus on the proposed indicators using a modified Delphi method, which involved rounds of rating the indicators, feedback on group ratings, and in-person meetings.

The process ultimately resulted in 46 indicators (40 necessary-care indicators and 6 avoidable-outcome indicators). Of these, five were based on randomized controlled trial evidence, seven on observational trial evidence, and the rest on expert opinion. The indicators were thus based on solid scientific evidence to the extent possible and, where evidence was lacking, on expert consensus. The indicators spanned several types of care-initial evaluation, prevention, routine monitoring, diagnostic testing, therapeutic intervention, and hospitalization followup, as well as avoidable outcomes, and they covered both hospital inpatient care and outpatient care. Examples of necessary-care indicators included an electrocardiogram during an emergency department visit for unstable angina or a physician office visit within four weeks of a hospital discharge for gastrointestinal bleeding. Examples of avoidable outcomes included admissions for a perforated gallbladder among patients with a known diagnosis of gallstones, or admissions for diabetic coma among patients with known diabetes.

The ACE-PRO method offered numerous strengths. First, it used claims data, which have numerous advantages for monitoring access to care, identifying trends, and analyzing programmatic success. Claims data are routinely collected, relatively inexpensive to analyze, timely, and easily focused on policy-relevant geographical and ethnic subgroups.

Second, and more important, by clearly specifying certain services as necessary care, the ACE-PRO method addressed the major shortcoming of earlier claims-based studies of access to care, namely, the difficulty in interpreting results. Earlier analyses had generally relied only on measuring volumes of services across all beneficiaries. PPRC's 1994 Annual Report to Congress, for example, reported average annual changes per beneficiary from 1991 to 1993 in the quantities of such services as gastrointestinal endoscopies, coronary artery bypass grafts, and CAT scans (Physician Payment Review Commission 1994). Declining service use over time, however, does not necessarily imply that access has deteriorated over time, nor, conversely, does increasing use over time translate to improved access. Likewise, lower or higher service use at any given time in one population subgroup compared to another does not necessarily mean worse or better access for one or the other. Perhaps the time period or subgroup with higher service use is, in fact, experiencing *over*use. Or perhaps the lower-use time period or subgroup has had *increased* access and therefore produced a lower backlog of patients for the service. Focusing on rates of necessary care in well-defined populations of beneficiaries who, by definition, should *all* ideally be receiving the services removes these ambiguities. Declining or lower rates of necessary care do then strongly imply access problems.

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[8] Literature sources included randomized controlled trials, meta-analyses, review articles, practice guidelines, observational studies, medical textbooks, and consensus reports.

Despite the clear theoretical advantages of using the necessary-care framework to study access to care, extending the framework to SNF care faces a number of challenges. These challenges arise primarily because SNF care denotes a *site* of care, and not a well-defined service or set of services unique to SNFs.[9]

First, unlike the clear mappings of discrete services to narrowly defined conditions developed by Asch et al. (2000)—such as specific blood tests for patients with diabetes or anemia, or specific surgeries for patients with gallstone attacks or blocked carotid arteries—"SNF care" comprises a complex, variable bundle of nursing, therapy, and medical services delivered in differing combinations and degrees to a wide range of patients. Thus, while there is some published evidence on the effectiveness or necessity of specific services that might be delivered as *components* of SNF care to some subsets of SNF patients (for example, speech therapy to stroke patients, or frequent turning for patients at risk of pressure ulcers) there is a virtual absence of data on the effectiveness or necessity of SNF care *per se*. Similarly, there is negligible evidence on the outcomes that are avoidable through the provision of adequate SNF care *per se* (Archibald and Chen 2000).

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[9] The distinction between site of service and service would pose no problem if SNFs delivered a uniform, well-characterized set of services that could be provided nowhere else, so that the site of services became synonymous with the services themselves. Unfortunately, this is not the case.

Second, SNFs themselves vary widely. Some SNFs responded to the incentives of cost-based reimbursement[10] by developing sophisticated, costly capabilities (such as intravenous care, laboratory services, or radiographic services) while others continued to provide only the minimum and fairly basic therapy and nursing services that Medicare requires for the SNF designation. Both types of facilities offer Medicare "SNF care" but actually provide dramatically different scopes and intensities of services. Unlike, for example, the test for glycosylated hemoglobin (one of the indicators in the Asch et al. [2000] study) which is unambiguous, "SNF care" could mean many different things.

Finally, the services provided within SNFs—skilled nursing care; physical, occupational, and speech therapy; medical social work--are not unique to SNFs. All these services are also provided by home health agencies and rehabilitation facilities.[11] Again, to contrast with the ACE-PRO project, while there are no obvious or easy substitutes for the services analyzed in that study (such as X-rays, physician office visits, or surgeries), these other providers can find substitutes for SNF care.

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[10] Specifically, the availability of exceptions to cost limits.

[11] Beneficiaries may also receive therapy services from outpatient rehabilitation facilities.

C. STRUCTURE OF THE REPORT

Chapter II of this report outlines the administrative data sources available to a monitoring system. The most important of these are Medicare claims for hospital and SNF stays and the nursing home Minimum Data Set (MDS), now completed for all nursing home residents, whether or not their stays are covered by Medicare. Chapter III reviews existing clinical standards for postacute care for persons with diagnoses often associated with discharge to a SNF. Chapter IV summarizes the remarks and opinions of clinicians and organizations interviewed by Mathematica Policy Research, Inc. (MPR). Chapter V presents a conceptual framework for analysis of access to SNF care. The framework distinguishes clinical from nonclinical determinants of the postacute care setting and contrasts the clinically appropriate site of postacute care with the site where care is actually received. Chapter VI presents conclusions.

II. ADMINISTRATIVE DATA FOR MEASURING ACCESS TO CARE

This chapter describes administrative data available to measure access to needed SNF care and reviews the relevant literature.[1] Although our search of the literature found no studies in which administrative data have been used to assess access by Medicare beneficiaries to SNF care or services within SNFs, we did find a small number of relevant studies that used administrative data for related analyses. The literature review describes the data used in these previous studies, the limitations of the data, and the lessons learned. This chapter also includes a description of several current projects that are developing indicators that use administrative data to measure the quality of SNF care.

A. SOURCES OF ADMINISTRATIVE DATA

Three sources of administrative data are available to measure access to and quality of SNF care: (1) the Medicare Enrollment Database (EDB), (2) Medicare hospital and SNF claims, and (3) the nursing home MDS.[2] This section describes the contents of each of these data sets, as well as their advantages and disadvantages as sources of data for analyzing access to needed SNF care.

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[1] Recall that our definition of access to needed SNF care includes both admission of patients who need the type of care provided by a SNF and receipt of needed services and treatments during SNF admission.

[2] The Online Survey Certification and Reporting (OSCAR) file, designed to support the states in their nursing home survey and certification process, is a fourth source of administrative data. It contains facility-level data on nursing home quality (such as rates of patients with pressure ulcers, patients taking antipsychotic medications, and patients receiving tube feedings) and staffing information (such as number of registered nurses per 100 residents). A facility's OSCAR file is overwritten with new data each time the facility is resurveyed. Because OSCAR is aggregated at the facility level, it is a less useful source of data.

1. Medicare Enrollment Database (EDB)

The EDB defines the universe of Medicare enrollees and contains demographic, enrollment, entitlement, and payer data on all current and past Medicare beneficiaries. Demographic and enrollment variables include dates of birth and death, sex, race, and Medicare identification number (the health insurance claim number, or HIC). Entitlement and payer data include the reason for Medicare eligibility (such as aged, disabled, and end-stage renal disease), membership in a managed care organization (MCO), and Medicaid payment of Medicare premiums and copayments.

2. Medicare Claims and Utilization Data

These files record information on all Medicare-covered services rendered to beneficiaries in the traditional Medicare fee-for-service (FFS) program.[3] The two types of claims are (1) Part A claims, which are from institutional providers (essentially, hospitals, SNFs, and home health agencies; and (2) Part B claims, which are from noninstitutional providers (a mixed group of all other Medicare providers that includes physicians, podiatrists, outpatient laboratories, medical equipment vendors, and ambulance companies).

Institutional claims are covered under Medicare Part A (the Hospital Insurance Program). They typically contain dates of admission and discharge, a principal diagnosis, multiple secondary diagnoses, procedures, and certain services provided during the episode of care.[4] The diagnosis and procedure codes in hospital claims usually are quite accurate because, under hospital PPS, they determine a hospital's reimbursement. Hospitals also are required to submit information on certain services they provide during the stay. These services include so-called "accommodation" or "hotel" services (such as stays in intensive or coronary care units) and various non-hotel ancillary services (such as diagnostic radiology, physical therapy, and laboratory tests). However, this information (called "revenue center codes") does not affect reimbursement, so its quality may not be as high as that of the diagnosis and procedure codes. One group of researchers found more than two percent of accommodation fields to be missing (Lave et al. 1994).

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[3] There are generally no claims for Medicare beneficiaries enrolled in MCOs, and thus this study focuses only on beneficiaries in the FFS program.

[4] HCFA uses the same Inpatient Standard Analytical File (Version H, 1998) to capture claims data for hospital inpatient and SNF care. Appendix A provides examples of the data fields contained in this file.

In similar fashion, SNFs are supposed to report ancillary services, such as therapy (physical, occupational, and speech-language) and laboratory or radiology services. Under cost-reimbursement, SNFs had strong incentives to complete this information thoroughly, as they were paid for each separate service provided. Under PPS, SNFs no longer have the same incentives to report ancillary services; however, they still have some incentive, because assignment to certain RUG-III groups, particularly in the Rehabilitation and Extensive Service domains, is related to the provision of certain services. Nevertheless, HCFA has stated that it expects the SNFs to continue completing these fields. To our knowledge, there has been no recent assessment of the quality of the revenue center code data in SNF claims.

Noninstitutional claims are for services provided under Medicare Part B (the Supplemental Medical Insurance Program). They typically include information on dates of service, procedures, and one or two diagnosis codes. The Part B claims of particular interest to our study are physician claims.

Medicare claims data can be used to construct a profile of an individual beneficiary's health care use. Medicare hospital claims data provide the patient's principal diagnosis at the time of hospital discharge, secondary diagnoses, and surgical or other procedures performed during the admission.

3. Minimum Data Set (MDS)

The third source of administrative data is the MDS, which must be used to assess all patients admitted to nursing homes in the United States.[5] For those covered under the Medicare SNF benefit, the MDS must be completed by the SNF staff at days 5, 14, 30, 60, and 90 of the admission. Table II.1 lists the major domains covered in the MDS assessment and gives examples of items within each domain.[6] Data captured via the MDS are available in electronic form.[7]

The MDS is used to determine the per diem payment to the SNF. Under PPS, the amount that Medicare pays a SNF for a patient varies according to certain patient characteristics that are recorded on the MDS, such as skilled care and therapy needs, treatment needs, functional limitations, and diagnoses. These characteristics predict the patient's expected resource utilization. Using the MDS data, the SNF assigns each patient to a group in the

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[5] The MDS is one component of the Resident Assessment Instrument (RAI) used for assessment and screening of all nursing home residents. Developed in response to a mandate included in Omnibus Budget Reconciliation Act of 1987 (OBRA 87), the RAI is a tool to provide a uniform, comprehensive functional assessment for nursing home residents. The RAI was intended to facilitate communication and problem solving among a multidisciplinary team of caregivers by creating a common set of variables by which to describe a resident's needs. In addition to the MDS, the RAI contains 18 condition-focused Resident Assessment Protocols (RAPs) that are implemented when completion of the MDS for a resident indicates a potential problem. The RAPs specify an additional highly focused assessment of a resident's status and were designed to facilitate care planning (Hawes 1997).

[6] Appendix B contains the MDS initial assessment form.

[7] In addition to the items now assessed in the MDS, new sections are being added (such as a section with the names, doses, and frequency of administration of medications), but these are not yet being completed by all states.

TABLE II.1

CONTENTS OF THE MINIMUM DATA SET (MDS)

MDS Domains	Examples of Items Assessed
Background and customary routines	- Prior residence/Lifetime occupation - Social involvement
Communication/hearing patterns	- Hearing impairment - Ability to understand verbal communication
Physical functioning	- Ability to perform activities of daily living
Mood and behavior patterns	- Indicators of depression - Behavioral symptoms
Disease diagnoses	- Diseases and infections
Oral/nutritional status	- Chewing or swallowing problems - Height/weight - Nutritional approach (feeding tube, therapeutic diet)
Skin condition	- Ulcers or other skin problems (rashes, lesions) - Skin treatments (pressure-relieving devices)
Special treatments and procedures	- Chemotherapy - Intravenous medications - Tracheostomy care - Ventilator/respirator - Total days and therapy minutes (speech, occupational, respiratory, or physical therapy) - Hospitalizations, emergency room, physician visits
Cognitive patterns	- Memory - Cognitive skills for decision making
Vision patterns	- Visual impairment/appliances used
Continence	- Bowel and bladder continence - Appliances used/training programs
Activity pursuit patterns	- Time awake/asleep - Activity preferences
Health conditions	- Weight gain/loss and hydration status - Signs/symptoms (fever, vomiting, shortness of breath)
Oral/dental status	- Condition of teeth/use of dentures
Medication use	- Number of medications - Use of antipsychotic, antidepressant, antianxiety, or hypnotic, or diuretic drug

RUG-III, a hierarchical patient classification system. Each RUG-III group is associated with a payment weight that reflects the average level of resources required to provide care for patients in that group. Medicare typically covers only the first 26 of the 44 RUG-III groups, because they are, generally speaking, the only ones meeting the Medicare requirement that patients must need daily skilled care. Because they must be reassessed with the MDS at specified points, patients' RUG-III group assignments and reimbursements generally change over the course of a stay.[8]

One limitation of the MDS is that it was designed to assess the condition and care of nursing home patients in general, and does not address those conditions that are particularly prevalent among SNF patients. This issue may be resolved if the Minimum Data Set for Post-Acute Care (MDS-PAC) is introduced; the MDS-PAC is designed to address the needs of SNF, subacute, rehabilitation, and long term care hospital patients. The goal of the MDS-PAC is to provide a better source of data for evaluating SNF care.

Although MDS data could be used to identify care needs within the SNF and assess patient outcomes, it does not capture service use in a comprehensive fashion. It is an assessment tool to capture patient characteristics and conditions. Some proxies for service use are captured, such as the number of minutes of physical therapy provided in the seven days prior to the assessment. However, other information from the MDS, such as a need for routine diabetic foot inspections, does not translate into service use data in any of the available administrative data sources. The next section describes the process by which patient needs assessed in the MDS could be matched to service use in the claims data.

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[8] Specifically, the MDS completed at day 5 determines the payment from days 0 through 14, the MDS on day 14 determines the payment from days 15 through 30, the MDS on day 30 the payment for days 31 through 60, and so on.

B. MATCHING MDS ASSESSMENT DATA TO SNF CLAIMS DATA

Since June 1998, all nursing facilities have been required to use the MDS to assess residents within five days of admission and at specified intervals and to transmit this information electronically to a state MDS repository. The state in turn is required to transmit the data to HCFA's MDS repository.

The MDS assessments residing in the national repository are not linked or connected in any way to claims for nursing home care filed with Medicare or state Medicaid programs. Researchers who wish to match information from Medicare SNF claims to the resident characteristics and treatments appearing on the MDS must link the two records themselves using identifying information provided on the MDS and on the SNF claim. The process is more complex than simply matching the two by a simple identifier. At this time there is no standard approach for matching claims to the MDS.[9] However, the matching process would involve the following steps:

- *Select beneficiaries and timeframe of interest.* The first step in the process is to identify admission dates and HIC numbers for a collection of SNF stays of interest identified from HCFA Standard Analytic Files (SAFs). The HIC number is then matched to the Medicare EDB to secure additional identifying information for the person represented by the HIC number on the claim. The EDB will also be used to verify HIC numbers appearing on the MDS, using other identifying information. Identifying characteristics include first and last name, sex, and date of birth. This information is added to analytic variables of interest extracted from the SAF record.
- *Define time period for MDS submission.* Although nursing facilities are required to submit the so-called "admission MDS" within five days of a patient's admission, facilities occasionally miss this deadline for some patients. For assurance that the admission MDS is captured, a window of time extending from the date of SNF admission (which appears on the SAF record) to some date 10 days or more after admission must be defined. A longer window may be defined so that initial assessments filed late are captured or subsequent assessments are selected as well.

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[9] Much of the information in this section is based on conversation with Barbara Bell of Abt Associates, Inc.

- ***Select MDS records.*** The MDS repository makes MDS records available to researchers based on the state and time period of interest. All MDS assessments that match either one of the selected HIC numbers or one of the selected first and last names *and* that bear an assessment date within the window defined in the previous step are then selected by the researcher. The resulting set of MDS assessments is considered to be the *maximal matching set.* This set is probably too large, meaning that some of the matches of SNF claims to MDS assessments in the set are probably in error.

- ***Specify the strictness of the match.*** Within the maximal matching set there are sure to be some matches of assessments to claims that are in fact incorrect, meaning that the beneficiary represented on the claim is not the same person as the beneficiary represented on the "matching" MDS. The incidence of these incorrect matches can be reduced by requiring that name *and* HIC number match or that HIC number *and* date of birth match. The number of incorrect matches can be reduced even further by requiring that name, HIC number, sex, and date of birth all match. Requiring greater strictness in the match reduces the number of claims that are successfully matched to MDS assessments.

Although there is a clear trade-off between the proportion of MDS assessments that are matched to claims and the accuracy of these matches, the quantitative terms of the trade-off have not been thoroughly investigated. Investigators at Abt Associates have found that since implementation of the PPS for Medicare SNF care, it is possible to match the MDS assessment to at least 75 percent of SNF claims when one requires that first and last name, HIC number, and month and year of birth all match.

C. STUDIES USING ADMINISTRATIVE DATA

Although our review of the literature found no studies that used administrative data specifically to examine access to SNF care, we did find studies using administrative data for other purposes that may be useful to our investigation. This finding is not surprising, for, until recently, the idea of measuring access to SNF care has received little attention. Medicare SNF care had been cost-reimbursed; most attention had been on examining the overuse, rather than the underuse, of services. This section describes these studies and highlights some of the lessons learned from this research.

1. Studies of SNF Placement

We found three studies (Neu et al. 1989; Liu et al. 1998; Gage 1999) that used administrative data to predict postacute care placement for hospitalized Medicare beneficiaries. Although they describe only patterns of SNF use and did not study access issues directly, it may still be reasonable to view actual SNF usage as a crude surrogate for SNF need. Since most patients strongly prefer that a hospital discharge them home rather than to a nursing home, it is fair to assume that most SNF admissions probably do reflect some degree of true need for SNF care, and that the proportion of inappropriate SNF admissions is fairly low.

Next, we describe some of the useful findings and lessons from these three studies. Clinically based variables in the claims data had a strong and clinically plausible relationship to SNF admission. For example, patients with a principal diagnosis code of stroke and a secondary diagnosis code of aspiration pneumonitis were much more likely to have a SNF admission than stroke patients without this secondary code. Increased length of hospital stay, presumably indicating more severe illness, was also predictive of SNF admission. Disability increased the likelihood of SNF placement as well. Age and sex are variables that appear to be useful proxies for unmeasured clinical information. Advanced age is associated with SNF use and probably indicates such factors as increased frailty, comorbidity, and dementia. Female gender is also associated with SNF use and, since women tend to outlive men, may indicate lack of a caregiver spouse (although other explanations may apply as well).

Neu et al. (1989) were able to link hospital and SNF claims to examine hospital readmissions from SNFs. They were able to study diagnosis codes for these readmissions, and their preliminary attempts appeared clinically plausible. They first defined a hospital readmission from a SNF as a hospital claim with an admission date equal to the discharge date on a SNF claim for the same patient. They then found that patients with congestive heart failure (CHF) and chronic obstructive pulmonary disease (COPD) were much more likely to be readmitted for the same diagnostic related group (DRG) than patients with orthopedic problems or strokes, consistent with the known tendency of CHF and COPD patients to experience recurrent exacerbations of their chronic illness. Neu et al. (1989) also noted that readmission rates were highest in the first seven days of SNF admissions. If hospital readmission rates are ever considered as a potential clinically based indicator, it may be important to assess whether readmissions early in a SNF stay truly reflect poor-quality SNF care versus the quality of hospital care or medical instability at hospital discharge.

Neu et al. (1989) discussed some limitations of claims data. The link between reimbursement and accuracy of claims coding is fairly well known, but they provide an insightful review—principal diagnoses and surgical procedures influence payment amount and are likely to be accurately coded, whereas secondary diagnoses and nonsurgical procedures are not, and they may be less accurate.[10] Neu et al. also commented on how the lack of sociodemographic data in claims data can sometimes make it difficult to assign causal interpretations to observed associations. The association between female gender and SNF use, for example, *may* reflect lack of a caregiver spouse, or it may reflect something else entirely. The research by Gage (1999) and Liu et al. (1998) produced conclusions similar to those of Neu et al. (1989).

The key limitation of all these studies is that their designs do not permit any examination of patients who needed SNF admission but were sent home instead. Nevertheless, we believe that the studies provide encouragement to the notion of using clinically based indicators of needed SNF admission in administrative data.

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[10] Despite the potential for undercoding, the secondary diagnoses were still powerful predictors of SNF use.

2. Studies of Care Within the SNF

Although we found no studies that used administrative data to examine directly the quality of care provided within SNFs, we did find several studies that reported the validity and reliability of the MDS (Blaum et al. 1997; Brandeis et al. 1995; Rantz et al. 1997; Resnick et al. 1996; and Sgadari et al. 1997). Other studies assessed the impact of MDS assessment on ADLs, continence, and cognition by comparing data from before and after the implementation of the MDS (Fries et al. 1997; and Phillips et al. 1997). All these studies used highly trained research nurses to collect MDS data. As yet, no studies have described the use of MDS data in a "real-world" setting, with MDS collected by actual patient care staff within a SNF. Our concern is that MDS coding during actual patient assessment may be less accurate than that reported under the controlled conditions of a research study. In a later section of this chapter, we report anecdotal information on problems associated with MDS data.

D. OTHER PROJECTS POTENTIALLY RELEVANT TO THIS STUDY

In this section, we discuss projects currently under way to develop quality indicators for nursing home care that may be relevant to our project. All these initiatives use MDS data or adaptations of MDS data, and one is also using Medicare claims data.

1. CHSRA Indicators

We mention only briefly the quality indicators (QIs) developed for HCFA at the Center for Health Systems Research and Analysis (CHSRA) at the University of Wisconsin-Madison, because they are focused primarily on long-term nursing home care, rather than SNF care. It is hoped that the QIs will be used both by facilities internally, for quality improvement, and by external reviewers, such as state survey and certification agencies. They are also being incorporated into the quality measurement system for long term care institutions of the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO).

Data on the effectiveness of QIs are few. Preliminary work in long term care settings supports their reliability (Phillips et al. 1997), but they have not been in use long enough to show whether they have any effects on quality. Whether they are relevant for measuring SNF quality of care is unknown, although the Quality Medical Review (QMR) project, described later in this chapter, may shed light on this question.

2. Quality Outcomes in Subacute and Home Care Programs

This project, part of a larger Agency for Health Care Policy and Research (AHCPR) project entitled "Expansion of Quality of Care Measures (Q-SPAN)," was relevant to SNF care but unfortunately came to a halt. One of the project's goals was to develop outcome measures with MDS data for SNF patients with specific diagnoses, but the project was unable to enroll enough facilities for the study. The investigators on this project are also directing the "Mega QI" Project described next.

3. The "Mega QI" Project

This project, whose full title is "Development and Validation of Measures and Indicators of the Quality and Appropriateness of Services Rendered in Post-Acute and Long-Term Care Settings," has the potential for producing valuable indicators to monitor the quality of SNF care. HCFA is funding the investigators not only to develop quality indicators but, importantly, to validate them as well. The project uses MDS-PAC data (noted previously) and is studying QIs for other inpatient postacute and long term care settings besides SNFs. The QIs were scheduled to undergo pilot testing in late 2000.

4. SNF PPS Quality Medical Review Project

The QMR project is important because its underlying goals and approaches are consistent with those of our current project and because its experience offers valuable lessons for us. The project was mandated by the BBA of 1997, which, along with SNF PPS, required the development of a system to ensure the quality of care under the new payment policy.

HCFA is funding a consortium of organizations to create a system to track the effects of SNF PPS by (1) developing and validating *facility*-level quality indicators, and (2) developing a *state*-level monitoring system. The organizations involved are peer review organizations (PROs), fiscal intermediaries (FIs), state nursing home and certification agencies, and state Medicaid agencies. For the first goal, the contractors have developed a set of draft-quality indicators suitable for programming into national MDS data and Medicare hospital and SNF claims data: changes in activities of daily living (ADL) scores, rate of discharge from SNF to the community, hospital readmissions, emergency room visits, SNF length of stay, and mortality. Many of these outcomes are to be risk-adjusted using regression models. Using the administrative data, the project will select a set of SNFs with either extremely high or extremely low scores on the draft indicators, and the project will validate the indicators by site-visiting these SNFs for staff interviews and chart reviews to study the processes of care. A separate task for the first goal is to see whether eight of the CHSRA QIs are accurate measures of SNF quality of care by studying state survey agency reports, analyzing national and state MDS data, and performing chart reviews at selected SNFs.

The second goal, developing a state-level monitoring system, will rely on a mixture of trend analyses of MDS and Medicare claims data aggregated to the state level, and interviews and surveys of key informants. The informants include hospital discharge planners, SNF admission coordinators, state hospital associations, and staff of state beneficiary complaint or ombudsmen offices.

We have spoken with some of the QMR researchers, who generously shared some potential pitfalls they have encountered. First, their original plan was to develop diagnosis-specific indicators for patients with hip replacement, stroke, and pneumonia, but they have found that they cannot accurately identify patients' primary diagnoses through the MDS data. Second, although they have been able to identify hospital readmissions, they have been unable to devise a satisfactory risk-adjustment model. Third, they have found the MDS functional status data to be of questionable reliability.

E. SUMMARY

Our search of the literature found no studies that used administrative data to assess access to SNF care. However, we did find a small number of studies that used administrative data to examine other aspects of SNF use. Neu et al. (1989), while not a direct study of access to needed SNF admission, did provide useful positive information on administrative (Medicare claims) data: there are clinical variables that correlate with SNF use, it is possible to identify hospital readmissions from SNFs and their diagnosis codes, and it may be important to consider the timing of hospital readmission relative to SNF admission. The study also highlighted some of the limitations of claims data: the link between accuracy and reimbursement, and the lack of sociodemographic data. We also found a number of ongoing projects relevant to our work. Most notably, the QMR researchers provided us with some cautionary information on possible problems in identifying patients' primary diagnoses in MDS data, in developing clinical risk-adjustment models for hospital readmissions, and in the reliability of data on patients' functional status.

III. STANDARDS FOR SKILLED NURSING FACILITY CARE

A. STANDARDS FOR ADMISSION TO SKILLED NURSING FACILITIES

Determination of appropriate postacute placement, including SNF care, begins with an assessment of need. This assessment, along with the decision to refer a patient for SNF admission, is usually made by a hospital discharge planner.[1] We found few published criteria for SNF admission other than those for Medicare eligibility. In addition, there is no universal data collection tool to assess patient needs for postacute care. Thus, the literature provides little by way of guidance on standards for admission to SNF care.

This chapter also describes the different types of postacute care available and the Medicare criteria for admission to each of these settings. We also discuss several studies that have tried to predict SNF admission based on patient characteristics. While these studies cannot tell us about the appropriateness of SNF admissions, they do describe the types of patients who are often cared for in the SNF setting.

1. Postacute Care Setting

Postacute care is usually provided in four types of settings: (1) in the patient's home by a home health agency, (2) in a SNF, (3) in a hospital-based or freestanding rehabilitation facility, and (4) in a long term care hospital. We will describe briefly the services provided and Medicare coverage requirements of each of these settings.

To qualify for Medicare home health care, the patient must be referred by a physician (there is no prior hospitalization requirement) and must need either part-time or intermittent skilled nursing and therapy services. Although patients must be homebound, they may leave occasionally—for example, to visit a physician. Patients in need of skilled observation can qualify for home health care only if there is a reasonable potential for complications or a possible need to change their treatment regimen. Patients receiving home health care usually require less skilled care than those in facility-based, postacute care settings. Home health patients must be able to support themselves at home, either on their own or with the help of family members or other caregivers.

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[1] Patients may enter SNFs from other settings, such as rehabilitation hospitals or residential care facilities, but this is less common.

Medicare covers SNF care for patients who have been discharged from a hospital stay of at least three days in the 30-day period prior to SNF admission. Most Medicare SNF patients are transferred directly from the hospital. SNFs provide nursing care and emergency access to a physician 24 hours a day. In addition, SNFs must offer dietary, pharmacy, medical social work, and dentistry services. Patients admitted to a SNF usually require a higher level of care than patients in home health care.

Medicare covers care in a rehabilitation hospital for patients who are referred by a physician and require frequent physician involvement, 24-hour-a-day rehabilitation nursing, at least three hours of therapy per day, and the care of a multidisciplinary group of professionals. Rehabilitation hospitals must demonstrate that 75 percent of their patients have at least 1 of 10 specific conditions, 9 of which are musculoskeletal or neurological diagnoses, and the 10th, burns. Rehabilitation hospitals also must demonstrate that 75 percent of their patients receive three or more hours of therapy a day. It is required that patients be expected to improve as a result of therapy. Therefore, patients admitted to rehabilitation hospitals usually are stronger and more capable of actively participating in a rehabilitation program. Sometimes patients are admitted to a SNF to build up their strength before being admitted to a rehabilitation hospital.

Medicare admission to long-stay hospitals also requires a physician referral, but criteria for admission are less well defined than those for rehabilitation hospitals or SNFs. To keep their certification, long-stay hospitals must have an average length of stay of at least 25 days. Patients in such hospitals receive services comparable to those provided by rehabilitation hospitals, psychiatric hospitals, and SNFs that serve medically complex patients. Generally, patients in long-stay hospitals require functional and restorative care for chronic conditions.

Which postacute care setting is most appropriate for a patient is a complex question. Discharge planners often have several options from which to choose, including hospital-based or freestanding rehabilitation units, subacute units, SNFs, residential care facilities, and home health care. The Medicare coverage criteria suggest that (1) patients cannot receive home health care if they are not homebound and require more than part-time or intermediate care, and (2) patients should not be placed in a rehabilitation facility unless they require the intensive type of therapy the facility provides. Several other factors may also influence the placement decision, such as the supply of local providers, whether the hospital is affiliated with certain postacute care providers, the discharge diagnosis, the patient's physical and cognitive functioning, the patient's previous living environment, and the patient's and family's preferences.

2. Guidelines for Referral to Skilled Nursing Care

Despite the importance of the placement decision, discharge planners have no nationally recognized criteria to aid them in their decision-making. Although JCAHO has accreditation standards that address coordination of care activities, these standards do not offer any specific criteria for how decisions regarding postacute care placement should be made. Similarly, the American Hospital Association (AHA) and the American Nurses Association (ANA) have guidelines for discharge planning, but again they offer only general guidance (Zarle 1987).

The process of discharge planning begins at the time of the patient's admission to the hospital. The discharge planner must quickly identify those patients who have potential postacute care needs. Terry (1988) has proposed a set of criteria for this purpose (Table III.1). This screening tool and others like it help to identify patients with postacute care needs, but these

TABLE III.1

SCREENING CRITERIA FOR DISCHARGE PLANNING

Patients with Discharge Planning Needs

- Dependent in activities of daily living (ADLs)
- Age over 65, especially age over 75
- Diagnosis with long-term consequences (cancer, stroke, chronic renal failure, diabetes, chronic obstructive pulmonary disease, congestive heart failure)
- Intravenous therapy (patients hospitalized primarily to receive antibiotics, hyperalimentation)
- Lack of consciousness or orientation (comatose, lethargic, disoriented)
- Living arrangement problems (lived alone, previous situation inadequate)
- Medications (new to insulin injections, noncompliance, multiple medications)
- Prior residence in a nursing home, personal care home, or community facility
- Nutritional support (patients receiving tube feeding)
- Ostomies (new colostomy, ileostomy)
- Rehabilitation (patient receiving physical, occupational, or speech therapy)
- Respirator (patients on respirator not in intensive care unit)
- Tubes in place (Foley, tracheostomy, suprapubic, gastrostomy, nasogastric)

SOURCE: Terry (1988).

tools do not assist the discharge planner in making the most appropriate placement. There is some evidence to suggest that discharge planning, even when conducted by a multidisciplinary team, does not always satisfy postacute care needs. Mamon et al. (1992) surveyed elderly patients two weeks after they were discharged home from the hospital. Overall, almost all patients self-reported one or more needs for postacute care (such as nursing care, assistance performing ADLs, or other aids to self-sufficiency). About one-third felt that at least one of their needs was not being met (for example, among those with reported needs, 17 percent reported unmet needs for skilled nursing care and 43 percent reported unmet needs for physical therapy or rehabilitation).

In light of the lack of formal guidelines regarding which patients should receive postacute care services and what setting for care is most appropriate, it is not surprising that there is no standardized assessment tool used to guide discharge-planning decisions. The Omnibus Budget Reconciliation Act of 1986 recognized the need for a standardized assessment instrument and required the development of a "Uniform Needs Assessment Instrument" (UNAI) to evaluate the needs of hospitalized patients for postacute care service. The UNAI would assess (1) functional capacity of a person, (2) nursing and other care requirements of the person to meet health care needs and assist with functional incapacities, and (3) social and familial resources available to help the person meet those requirements. The UNAI was to be used by discharge planners, hospitals, nursing facilities, other health care providers, and fiscal intermediaries in evaluating a person's need for post-hospital skilled nursing services, home health services, and long term care services of a health-related or supportive nature (O'Hare 1988). HCFA developed and field-tested the UNAI, but it has never been put into practice.[2] This is unfortunate, because a standardized postacute care needs assessment tool could provide a number of indicators of access to SNF care.

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[2] Appendix C contains the field-tested version of the UNAI.

3. Predictors of Nursing Home Admission

Despite the paucity of SNF admission guidelines, the literature includes many studies describing models that predict admission to postacute care settings.[3] These studies, some of which are summarized in Table III.2, use standardized geriatric assessment tools (for example, the Katz Activities of Daily Living Scale) and other data sources to predict which patients go to particular postacute care settings. We will discuss the findings in this literature in terms of (1) setting of care, and (2) patient characteristics associated with SNF admission. First, studies have predicted placement across the range of possible postacute care settings. Morrow-Howell and Proctor (1994) used a logistic regression model to define the factors influencing the discharge destinations of hospitalized patients. Discharge to a nursing home was positively associated with physical dependency at discharge, mental impairment, Medicaid eligibility, and the ability to pay privately for nursing home services. Discharge to a nursing home was not related to any of the diagnostic categories (congestive heart failure, chronic obstructive pulmonary disease, or hip fracture) studied. In another study, Kane et al. (1996a) used medical records and patient interviews to develop logistic regression models that compared the factors associated with discharge to different postacute care settings. The model correctly predicted the discharge location of between 52 and 71 percent of patients, depending on their diagnostic category. They found that most of the predictive power of their model came from the data collected during an interview done at the time of discharge (that is, *not* from administrative data). Their model showed that for stroke patients, the variables most predictive of postacute care use were the ADL

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[3] Many of these studies predict admission to nursing homes in general, rather than to SNFs.

TABLE III.2

STUDIES DESCRIBING PREDICTORS OF POSTACUTE CARE PLACEMENT

Source	Sources of Data	Care Settings Studied	Factors Predicting Care in Nursing Home or SNF
Fairchild et al. (1998)	- patient questionnaire and - hospital administrative data	Any PAC[a] vs. home care	- age ≥ 65 - increased physical impairment - decreased social support
Kane et al. (1996)	- patient interviews - medical records - hospital survey	nursing home vs. home without any home health care	Patient with Stroke: - ADL deficits - touch test errors - living alone Patients with Congestive Heart Failure: - ADL deficits - living alone Patients with Hip Replacement: - ADL deficits - living alone - increased age Hip Fracture: - increased age Hip Fracture with Hip Replacement: - living alone
Abraham et al. (1994)	- patient assessment	nursing home vs. home care	- decreased physical health status - increased functional deficits - increased cognitive impairments
Morrow-Howell and Proctor (1994)	- medical records - interviews with discharge planners	nursing home vs. home care	- dependency at discharge - mental impairment - Medicaid eligibility - ability to pay for nursing home care
Siu et al. (1993)	- patient assessment	SNF vs. residential care[b]	- ADL or IADL deficits - decreased emotional function
Neu et al. (1989)	- Medicare billing records - provider-specific files - Area Resource File	SNF vs. home care	- increased age - cared for in small/ medium hospitals - white
Wachtel et al. (1984)	- medical records	nursing home vs. home care	Men: - lack of spouse at home - nervous system disorder - mental disorders - ADL deficits - ≥ 4 medications at discharge Women: - spouse living at home - infectious disease - mental disorder - musculoskeletal disorder - ADL deficits - ≥ 4 medications at discharge

[a] Use of any postacute care services (rehabilitation, SNF, mental health facility, durable medical equipment, or home health care) was considered as one variable.

[b] Residential care level of a multilevel long term care facility.

SNF = skilled nursing facility
PAC = postacute care
ADL = activity of daily living
IADL = instrumental activity of daily living

score at discharge and the patients' expectation of what they would be able to do at six weeks after discharge. Among patients with CHF, the variable most predictive of nursing home use was living alone. For patients with hip procedures, greater disability at discharge and living alone were predictive of post-hospital care.

Researchers have not been very successful at defining distinct groups of patients who are admitted to SNF care versus rehabilitation hospital care (Morrow-Howell and Proctor 1994). Although the predictors of need found in many of the studies cited here can accurately discriminate between the need for SNF care versus home care, or rehabilitation hospital care versus home care, discriminating between the need for SNF care or rehabilitation hospital care has been more difficult. Neu et al. (1989) found that there is some degree of substitutability among the different types of postacute care services. For example, if rehabilitation hospital beds are in short supply, skilled nursing can be substituted for some patients. Thus, measuring access to SNF care by looking at the rate of admission for patients with a certain constellation of characteristics may be misleading unless admission to other postacute care services is also measured.

The literature also provides important information about the types of patients who are admitted to nursing homes. For example, Wachtel et al. (1984) reported their success in developing a tool to predict the discharge destination (either home or nursing home) of elderly hospital patients. They found that, for men, the presence of a spouse at home reduced the likelihood of nursing home placement, whereas, for a woman, a spouse at home increased such likelihood. For both men and women, a complicated new drug regimen and deficiencies in the ability to perform ADLs were the most important factors influencing nursing home placement. In another study, Siu et al. (1993) used a number of functional status measures to predict hospitalization or SNF admission among residents of a multilevel residential care facility. The study found that, with the exception of ADLs, emotional function was a stronger predictor of nursing home placement than other measures of physical functioning. A study by Fairchild et al. (1998) provided specific predictors of postacute care use. A patient questionnaire including medical conditions, social support, and the SF-36 (Medical Outcomes Study Short-Form 36) was used, along with patient administrative data, to predict placement into postacute care.[4] Their logistic regression model found three independent and significant predictors of postacute care use: age 65, significant physical impairment (SF-36 physical function score 15), and low social support (SF-36 social function score 50).

Predictors of admission to SNF and other postacute care suggest the types of patients who might need such care. The important predictors of SNF admission found in studies described here include functional impairment, cognitive deficits, inadequate home environment/family support, multiple medication use, and advanced age. Hospital discharge diagnosis (Morrow-Howell and Proctor 1994) and number of previous hospital admissions (Wachtel et al. 1984) did not predict SNF admission.

4. Measuring Access to SNF Admission

The factors described in the literature as predictive of nursing home/SNF placement include many of the factors listed in Terry's (1988) criteria for discharge planning and those assessed in the UNAI screening tool. If we had an accurate means of assessing patient characteristics such as functional status, cognitive status, and home environment, we might be able to develop criteria for appropriate SNF admission. However, these data are largely unavailable from hospital claims data. At the time of hospital discharge, all we really know about a patient is age, race, sex, and diagnoses.

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[4] All postacute care settings were combined into one dichotomous outcome variable: use of or non-use of postacute care.

B. STANDARDS FOR PATIENT CARE WITHIN SNFs

This section examines aspects of needed SNF care that are addressed by existing clinical practice guidelines, standards, and clinically accepted protocols. Because we found no guidelines that address general aspects of care for all SNF patients, we focused on guidelines for specific clinical conditions that are likely to have precipitated the SNF admission, as well as other conditions prevalent among SNF patients. We included nine such conditions: (1) hip fracture, (2) stroke, (3) CHF, (4) diabetes, (5) pneumonia, (6) urinary incontinence, (7) pressure ulcers, (8) depression, and (9) pain. Our review focuses on those parts of the guidelines that cover care likely to take place in the SNF or other postacute care setting, rather than in acute care or outpatient settings. Guidelines included those that made recommendations for follow-up care and monitoring after acute episodes and for the evaluation and management of conditions often seen in older, institutionalized patients.

Our review also considered the method of guideline development and was limited, whenever possible, to guidelines based upon evidence from clinical research.[5] Most guidelines use a mixture of research-based evidence (for example, from clinical trials) and expert consensus. The most methodologically sophisticated guidelines assign a grade for each recommendation, with the highest grades given to recommendations supported by the strongest evidence (large randomized trials), and the lowest grades to those supported only by the weakest evidence (expert consensus). This mixed methodology is necessary because many aspects of patient care (for example, evaluation and diagnosis) are not often the subject of randomized controlled trials, and only expert opinion can guide practice. Table III.3 lists the guidelines included in this chapter, along with their sponsor and method of development.

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[5] Another type of guideline, usually referred to as a standard of practice, does not rely on evidence in the development of recommendations, but attempts to codify existing practice. This type of guideline does not aim to move care toward an optimal method of practice, but instead attempts to reduce variations in care. We tried to avoid this type of guideline, but have included some if there were no other, more evidence-based, guidelines available.

This section provides a brief overview of each condition, including (1) the goals and types of care needed in the postacute period, (2) treatment recommendations, and (3) complications that may occur in the postacute period. The tables accompanying the text include clinical details on the recommendations.

1. Hip Fracture

Hip fracture is the leading cause of SNF admission, accounting for 7.4 percent of all Medicare-covered SNF admissions in 1996 (U.S. Department of Health and Human Services 1998). By the time of hospital discharge, patients who have had a hip fracture should be medically stable, but they may need skilled nursing for surgical wound care, deconditioning, or other postoperative complications.

Hip fracture patients who are placed in a SNF may not able to tolerate the demands of an intensive rehabilitation hospital program, but they usually still need both physical and occupational therapy services. These patients also may be placed in a SNF to build up their strength so they can be discharged to an intensive rehabilitation program.

This section will focus on guidelines for rehabilitation after hip fracture (we could locate no guidelines on nursing care for hip fracture patients). The rehabilitation goals for patients with hip fracture are to restore functional ambulation (through physical therapy) and independent self-care (through occupational therapy) (Hoenig 1997). Physical therapy usually begins with general conditioning exercises to improve strength, balance, and range of motion. As the patient progresses and gains greater independence in these tasks, the focus shifts to specific functional exercises to improve bed mobility, transfers, and then independent locomotion

TABLE III.3

GUIDELINES APPLICABLE TO THE CARE OF SKILLED NURSING FACILITY PATIENTS

Sponsoring Organization	Title of Guideline	Method of Development
American Physical Therapy Association	*Preferred Practice Pattern for Impaired Joint Mobility, Motor Function, Muscle Performance, and Range of Motion Associated with Bony or Soft Tissue Surgical Procedures*	Not specified
American Academy of Orthopedic Surgeons	*Rehabilitation of the Elderly*	Not specified
American Occupational Therapy Association	*Occupational Therapy Practice Guidelines for Adults with Hip Fracture/Replacement*	Not specified
American Heart Association	*Preventing Ischemic Stroke in Patients with Prior Stroke and Transient Ischemic Attack*	Evidence-based with expert consensus
American Heart Association	*Supplement to the Guidelines for the Management of Transient Ischemic Attacks*	Evidence-based with expert consensus (recommendations graded)
American College of Chest Physicians	*Consensus Conference on Antithrombotic Therapy*	Evidence-based with expert consensus (recommendations graded)
American Heart Association	*Prevention Conference IV: Prevention and Rehabilitation of Stroke*	Evidence-based with expert consensus
Agency for Health Care Policy and Research	*Post-Stroke Rehabilitation*	Evidence-based with expert consensus (recommendations graded)
Agency for Health Care Policy and Research	*Heart Failure: Evaluation and Care of Patients with Left-Ventricular Systolic Dysfunction*	Evidence-based with expert consensus (recommendations graded)
American Medical Directors Association	*Heart Failure*	Adapted from the AHCPR *Heart Failure* guideline
American Heart Association	*Guidelines for the Evaluation and Management of Heart Failure*	Evidence-based with expert consensus (recommendations graded)
Infectious Diseases Society of America	*Community-Acquired Pneumonia in Adults: Guidelines for Management*	Evidence-based with expert consensus (recommendations graded)
Infectious Diseases Society of America	*Quality Standards for Immunization*	Evidence-based with expert consensus
American Diabetes Association	*Translation of the Diabetes Nutrition Recommendation for Health Care Institutions*	Evidence-based with expert consensus
Minneapolis/St. Paul Diabetes Educators	*Guidelines for Diabetes Care in Long-Term Care Facilities*	Expert consensus

TABLE III.3 *(continued)*

Sponsoring Organization	Title of Guideline	Method of Development
Agency for Health Care Policy and Research	*Urinary Incontinence in Adults: Acute and Chronic Management*	Evidence-based with expert consensus (recommendations graded)
Agency for Health Care Policy and Research	*Treatment of Pressure Ulcers*	Evidence-based with expert consensus (recommendations graded)
American Medical Directors Association	*Depression*	Adapted from the AHCPR* *Depression in Primary Care* guideline
American Medical Directors Association	*Pharmacotherapy Companion to the Depression Clinical Practice Guideline*	Evidence-based with expert consensus
American Society of Anesthesiologists	*Practice Guidelines for Cancer Pain Management*	Evidence-based with expert consensus
American Society of Anesthesiologists	*Practice Guidelines for Chronic Pain Management*	Evidence-based with expert consensus
American Geriatrics Society	*The Management of Chronic Pain in Older Persons*	Evidence-based with expert consensus
American Medical Directors Association	*Chronic Pain Management in the Long-Term Care Setting*	Evidence-based with expert consensus

*Agency for Health Care Policy and Research.

(O'Neil et al. 1992).[6] The goals of occupational therapy are to restore the patient's independent and safe performance of ADLs. For example, if the goal is to improve the patient's ability to dress, occupational therapy may focus on attention span, learning, and performing tasks in sequence. The plan of care should set realistic short-term and long-term goals and monitor the patient's progress in therapy, so that changes in the rehabilitation prescription can be made as needed (Cruise and Koval 1998).

The guidelines for rehabilitation after hip fracture recommend that patients observe their surgeon's postoperative precautions, which usually include orders limiting weight-bearing on the affected leg for six weeks to six months, and restricting movement of the hip joint. Hip fracture patients should be taught compensatory techniques for self-care and mobility and should be instructed in the use of adaptive equipment (for example, toilet safety frames or shower chairs) (Platt 1999).

Patients should be encouraged to walk (with a walker or crutches for the first six weeks) whenever possible, to maintain their aerobic capacity and muscle tone. The guidelines recommend consideration of a motorized wheelchair for patients with severely compromised neuromuscular, cardiac, or pulmonary status. However, the patient's vision and mental competence must be assessed to ensure that they can operate the wheelchair safely (Cruise and Koval 1998). The guidelines also recommend that therapy programs be scheduled during the part of the day, when the patient is most productive, and that they allow for adequate rest periods, because sequential exercise sessions are often poorly tolerated.

The American Occupational Therapy Association guideline recommends that lack of patient progress over defined time periods be a signal to consider either decreasing the intensity of therapy or discharging the patient from therapy altogether, unless there is a clear expectation of functional improvement. Their suggested decision rule is a lack of objective evidence of patient progress over one week of intensive rehabilitation, or over two weeks in a less intense program. Therapy may be reinstated when progress is again expected.

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[6] The American Physical Therapy Association (1999) cites general guidelines for the care of patients with hip fracture, but these guidelines do not distinguish the care needed by hip fracture patients from that needed by other types of patients.

Patients with cognitive or short-term memory deficits, however, may require a longer treatment program, because they have difficulty learning new techniques. These patients may also need follow-up teaching to ensure that they retain what they have learned in therapy (Cruise and Koval 1998).

Hip fracture patients require skilled nursing care to monitor the development of a number of postsurgical complications, including superficial or deep joint infections, blood clots, low blood pressure, and dislocation of the prosthesis. Patients also need repeated reinforcement and teaching in the follow-up period on the importance of compliance with postsurgical precautions to prevent dislocation of the hip joint.

2. Stroke

Stroke was the principal diagnosis for six percent of all Medicare-covered SNF admissions in 1996 (U.S. Department of Health and Human Services 1998), making it the second-leading diagnosis at the time of SNF admission. Post-stroke care can be divided into risk factor reduction, medical management, and rehabilitative therapy.[7] We found standards of care for each of these topics and present recommendations in Table III.4. Care within each of these areas will depend on the type and severity of the stroke. For patients who have had a moderate to severe stroke and who have already suffered serious physical or cognitive impairment, the focus

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[7] Although surgical management is outside the bounds of SNF care, both Wolf et al. (1999) and the American Heart Association (1999) recommend carotid endarterectomy for patients with significant blockage of the carotid artery.

TABLE III.4

RECOMMENDATIONS FOR THE CARE OF PATIENTS RECOVERING FROM STROKE OR TRANSIENT ISCHEMIC ATTACK (TIA)

Recommendations for Care:

Risk Factor Reduction:[a]

- Control of hypertension below 140/90 mmHg[1]
- Smoking cessation
- Treatment of coronary artery disease, cardiac arrhythmias, congestive heart failure, and valvular heart disease
- Limitation of alcohol consumption
- Treatment of hyperlipidemia
- For diabetics, glycemic control with a goal of 126 mg/dL
- Exercise
- Continuation of estrogen replacement therapy if applicable

Medical Therapy:

- For patients with atrial fibrillation, dose-adjusted warfarin sodium is administered (international normalized ratio [INR] in the 2.0 to 3.0 range; target 2.5) unless there is a specific contraindication for that medication. In which case, the patient should be treated with 50 to 325 mg/day of aspirin.[b]
- For patients with TIA or mild stroke who have mild carotid artery stenosis (less than 50 percent) and do not have atrial fibrillation, treatment with a daily dose of 50 to 325 mg of aspirin is of demonstrated benefit.[b]
- For patients with stroke and known coronary artery disease (CAD), the use of a statin drug to reduce low-density lipoprotein (LDL) cholesterol is also indicated. Statin use in stroke patients without prior CAD may also reduce the risk of stroke recurrence, as well as myocardial infarction and other vascular disease, but this had not been demonstrated.[b]

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[1] For persons with diabetes, blood pressure levels below 130/95 mmHg are recommended.

Recommendations for Care:

- To prevent deep venous thrombosis and pulmonary embolism, prophylactic treatment with low-dose subcutaneous heparin, low molecular weight heparin, or heparinoids should begin in the hospital. If anticoagulation therapy is contraindicated, the use of intermittent pneumatic compression devices is recommended. The appropriate duration of therapy is not stated.[c]

Rehabilitative Therapy:[2d]

- Assess the patient within three working days of admission to an intensive program and seven days of admission to a lower intensity nursing facility program
- Set rehabilitation goals and develop a rehabilitation management plan
- Monitor patient progress, weekly in an intensive program and biweekly in a lower-intensity program
- Include in the care plan a plan for management of dysphagia, nutrition, hydration, skin integrity, and management of bowel and bladder function
- Manage sensory motor defects
- Provide physical, occupational, speech, and language therapy
- Manage cognitive and perceptual deficits and diagnose and treat depression

[a]American Heart Association, *Supplement to the Guidelines for the Management of Transient Ischemic Attacks* (1999).

[B]Wolf et al., *Preventing Ischemic Stroke in Patients with Prior Stroke and Transient Ischemic Attack* (1999).

[c]American College of Chest Physicians, *Consensus Conference on Antithrombotic Therapy* (1998).

[d]U.S. Department of Health and Human Services, *Post-Stroke Rehabilitation* (1995).

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[2] The AHCPR guideline focuses on patients who have had a first stroke with subsequent hemiparesis either with or without other neurological impairments.

of postacute care is on rehabilitation to salvage functional abilities. For patients recovering from a mild stroke or transient ischemic attack (TIA), an important focus of postacute care is on reduction of risk factors, because of the high risk of a second, massive stroke (Wolf et al. 1999). Treatment includes rehabilitative therapy for any functional or cognitive impairment.

Risk factor reduction includes control of high blood pressure; control of high cholesterol; control of blood sugar in diabetic patients; and treatment of coronary artery disease, cardiac arrhythmias, CHF or valvular heart disease, if present. Guidelines for post-stroke care also recommend exercise, smoking cessation, and the limitation of alcohol consumption. There is no need to discontinue estrogen replacement therapy in women who have had a stroke (American Heart Association 1999).

To prevent recurrent stroke in patients who have suffered TIA or mild ischemic stroke, the guidelines recommend, in addition to risk factor reduction, certain medical treatment strategies, including daily therapy with aspirin or another antiplatelet agent. Long-term oral anticoagulation therapy is recommended only for patients with ischemic stroke or TIA who also have atrial fibrillation (Wolf et al. 1999). In addition, patients with restricted mobility due to an ischemic stroke are at increased risk of developing blood clots and should receive prophylactic treatment (American College of Chest Physicians 1998).

Rehabilitation often is the key component of post-stroke care for elderly patients, the goal being to improve whatever physical or cognitive abilities were affected (American Heart Association 1997). Physical, occupational, or speech therapy may be needed, along with psychological therapy to address depression or anxiety. The AHCPR guideline on post-stroke rehabilitation states that an assessment of physical and cognitive function should be performed upon admission, using standardized assessment tools. Patients with functional deficits and at least some voluntary control over the movements of the affected arm or leg should be encouraged to use the limb in functional tasks and offered exercise and functional training to build strength and motor control, relearn sensorimotor relationships, and improve functional performance. Patients with persistent functional deficits should be taught compensatory techniques for performing tasks. Adaptive devices should be used only if other methods of performing the task are not available or cannot be learned.

Patients who have had a stroke should have their risk for developing post-stroke complications assessed upon admission, and an appropriate plan of care should be developed (U.S. Department of Health and Human Services 1995). These complications include urinary tract infections, pulmonary infections, blood clots, pain, difficulty swallowing, falling, pressure ulcers, and depression and anxiety.

3. Congestive Heart Failure

CHF is the principal diagnosis for 4.7 percent of all Medicare-covered SNF admissions, making it the third-largest diagnostic category for SNF admissions (U.S. Department of Health and Human Services 1998). Care within the SNF should include medical management and rehabilitation for deconditioning.

Several guidelines provide recommendations for the care of patients with CHF (see Table III.5). The guidelines all recommend drug therapy to improve the heart's function and reduce the accumulation of fluids in the body. Patient weight, vital signs, symptoms, physical functional ability, drug levels, and renal function should be monitored closely. Changes in signs or symptoms or abnormal test results may indicate a need to modify the patient's drug regimen, notify a physician, or transfer the patient to the hospital. Some patients with CHF may benefit from cardiac rehabilitation programs (U.S. Department of Health and Human Services 1994a;

TABLE III.5

RECOMMENDATIONS FOR THE CARE OF PATIENTS WITH CONGESTIVE HEART FAILURE

Recommendations for Care:

Medical Management:[1a]

- ACE inhibitors should be prescribed for all patients unless contraindicated
- Patients with a contraindication to ACE inhibitors should be treated with isosorbide dinitrate and hydralazine in combination
- Volume overload should be treated with diuretics and dietary sodium intake limited
- Digoxin should be considered for patients with moderate to severe heart failure and some patients with mild heart failure
- Beta blockers may help improve functional status, but they should be used with great caution (the guideline considered their use experimental)
- Calcium channel blockers were generally not recommended, but may be used with great caution in patients with angina and heart failure
- Other pharmacologic agents are not routinely recommended except in specific patient populations such as those with atrial fibrillation or angina

Circumstances where hospital admission may be appropriate:[2b]

- Clinical or ECG evidence of acute myocardial ischemia
- Pulmonary edema or severe respiratory distress
- Oxygen saturation below 90 percent (not due to pulmonary disease)
- Severe complicating medical illness (pneumonia)
- Anasarca

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[a] U.S. Department of Health and Human Services, *Heart Failure: Evaluation and Care of Patients with Left-Ventricular Systolic Dysfunction* (1994); and American Heart Association, *Guidelines for the Evaluation and Management of Heart Failure* (1995).

[b] American Medical Directors Association, *Heart Failure* (1996).

ACE = angiotensin-converting enzyme inhibitor
ECG = electrocardiogram

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[1] These recommendations are for patients with systolic dysfunction. The goals of treatment for patient with diastolic dysfunction are to control symptoms by reducing ventricular filling pressure without reducing cardiac output. Recommendations for patients with diastolic dysfunction include the use of diuretic drug and nitrates for symptomatic patients. Calcium channel blockers, beta blockers, and ACE inhibitors may be of benefit.

[2] The AMDA guideline does not address the need for hospitalization directly and does not offer recommendations as to which of these circumstances could be treated in the SNF and which should be a cause for transfer to the hospital.

American Medical Directors Association [AMDA] 1996a; and American Heart Association 1995).[8]

4. Pneumonia

SNF patients are at risk of developing community-acquired pneumonia (CAP).[9,10] Pneumonia is considered to be community-acquired if the patient is not hospitalized at the onset of symptoms or has resided in a long term care facility for at least 14 days before the onset of symptoms. Thus, SNF-acquired pneumonia can be considered a subset of CAP.

The Infectious Diseases Society of America (Gershon 1997) makes several recommendations for the treatment of CAP that are applicable to the SNF setting. This guideline suggests obtaining a chest X-ray for the routine evaluation of patients who are likely to have pneumonia. The X-ray is also useful in determining the etiology and the prognosis, as well as for detecting alternative diagnoses or associated conditions. The guideline also recommends that blood cultures, gram staining and culture, measurement of blood gases, and other blood tests be performed on patients suspected of having pneumonia. Antibiotic treatment is required for almost all patients with pneumonia and can be oral or intravenous, depending on the suspected pathogens and the severity of the infection. Careful monitoring of the patient's condition is required to assess the response to antibiotic therapy. Nonresponse may require a change in antibiotic therapy or hospitalization.

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[8] The AMDA guideline was adapted from the AHCPR guidelines to apply specifically to the long term care setting.

[9] The development of CAP by a SNF patient may be an indicator of poor-quality care. However, this section focuses on recommendations for treatment of CAP in the SNF setting.

[10] The Infectious Diseases Society of American recommends that all adults age 65 or older, as well as younger people in high-risk groups (such as those with chronic cardiopulmonary disease, chronic metabolic diseases [including diabetes mellitus], chronic renal dysfunction, hemoglobinopathies, and immunosupression, as well as residents of long term care facilities and providers of home health care or health care to high-risk persons), should be vaccinated against pneumococcal pneumonia and influenza. People who received the pneumococcal vaccine prior to 1991 should be revaccinated (Bartlett 1998).

5. Diabetes

Diabetes was the sixth-leading principal diagnosis for SNF admissions in 1996 (U.S. Department of Health and Human Services 1998). In addition, diabetes is a common comorbid condition among elderly Medicare beneficiaries. Care of diabetic patients in the SNF consists primarily of medical management to prevent acute complications (for example, seizures or coma).

Several guidelines have provided recommendations for the care of elderly persons with diabetes (see Table III.6). Depending on the patient, insulin, oral diabetic medications, or nutritional therapy may be recommended. Regardless of the agent used for glycemic control, all diabetic patients should receive regular blood glucose testing. The guideline recommends that SNFs provide a regular, unrestricted diet to residents with diabetes. Further dietary restriction is unnecessary, because the regular meals in SNFs provide an appropriate number of calories, and they are served at regular times in consistent, appropriate portions. Restricting diets in elderly SNF patients runs the risk of malnutrition (American Diabetes Association 2000). In addition, diabetic patients should receive daily foot inspections. Nursing home residents with diabetes are also vulnerable to pressure ulcers and other infections, so skin care and hygiene are important areas of care (Minneapolis/St. Paul Diabetes Educators 2000; and Funnell 1999).

6. Urinary Incontinence

Urinary incontinence is a significant problem among acutely ill elderly people. A recent study found that among hospitalized elderly patients, 11 percent had persistent urinary incontinence on admission and 23 percent were incontinent at discharge (Palmer et al. 1992). Many of these elderly patients are probably transferred to a SNF for postacute care. Care of SNF

TABLE III.6

RECOMMENDATIONS FOR THE CARE OF PATIENTS WITH DIABETES

Recommendations for Care:

- To prevent malnutrition and weight loss, medical nutritional therapy for SNF patients should not include dietary restrictions.
- Blood glucose monitoring is essential to achieve and maintain blood-glucose control and to recognize hypo- and hyperglycemia.
- Blood glucose monitoring also is needed for patients taking insulin, particularly those who are unable to recognize or report hypoglycemia.
- Blood glucose monitoring schedule should be individualized based on the usual glycemic stability of the resident, treatment regimen and blood glucose goals. For patients who have relatively stable blood glucose levels and are within the target range, weekly fasting and two-hour post-prandial readings have been recommended.
- Urine glucose testing is of no benefit and is not recommended.
- Diabetic patients should have daily foot examinations.
- Hypoglycemia and hyperglycemic hyperosmolar nonketotic syndrome can represent significant risks for older adults. Nursing homes should adopt protocols for when to contact physicians or treat these acute events, which can result in costly and serious consequences.

SOURCE: American Diabetes Association, *Translation of the Diabetes Nutrition Recommendation for Health Care Institutions* (2000); and Minneapolis/St. Paul Diabetes Educators, *Guidelines for Diabetes Care in Long-Term Care Facilities* (2000).

patients with urinary incontinence usually consists of behavioral therapy and, sometimes, drug therapy.

Guidelines for urinary incontinence recommend that the patient's plan of care address (1) toileting schedule, (2) fluid and dietary intake, (3) strategies to decrease urine loss at night, (4) use of the most absorbent and skin-friendly products, and (5) prevention and early treatment of skin breakdown. The first choice for treatment should be the option with the fewest risks to the patient. In most cases, this will be behavioral therapy (such as toileting assistance, bladder training, or pelvic muscle rehabilitation). In addition to behavioral therapy, or if behavioral therapy is not effective, several medications can be used to treat both urge incontinence and stress incontinence (U.S. Department of Health and Human Services 1996).

Patients with urinary incontinence are at high risk for complications such as urinary tract infections and pressure ulcers. To prevent urinary tract infections and irritation, SNF staff need to monitor closely patients whose care includes catheterization or other devices. In addition, the nursing staff should adhere strictly to skin care protocols to prevent the development of pressure ulcers.

7. Pressure Ulcers

Pressure ulcers, like urinary incontinence, are a major cause of morbidity among nursing home patients, and their treatment requires significant staff time. Among SNF patients, pressure ulcers may have developed prior to or during hospital admission or after admission to the SNF. The goals of pressure ulcer treatment are healing the wound and preventing the development of additional ulcers. Both treatment and prevention of pressure ulcers requires skilled nursing care.

Recommendations for the treatment of pressure ulcers are based on regular (at least weekly) monitoring of the wound and of the patient (see Table III.7). Depending on the severity of the pressure ulcer, frequent cleansing and dressing of the wound may be necessary. Antibiotic

TABLE III.7

RECOMMENDATIONS FOR THE CARE OF PATIENTS WITH PRESSURE ULCERS

Recommendations for Care:

- Pressure ulcer assessment should include the location, size, and stage of the pressure ulcer, as well as whether the ulcer has sinus tracts, undermining, tunneling, exudate, necrotic tissue, granulation tissue, or epithelialization.

- Pressure ulcers should be evaluated at least once a week, but deterioration in the patient or the pressure ulcer requires more immediate reassessment and evaluation.

- Assessment of the pressure ulcer should include the whole person with (1) a complete history and physical examination, (2) identification of complications and comorbid conditions, (3) a nutritional assessment, (4) a pain assessment, (5) a psychosocial assessment, and (6) an evaluation of risks for additional pressure ulcers.

- Recommendations for positioning patients in bed or in a chair state that no donut devices should be used, pressure on heels should be relieved, the head of bed should be at the lowest possible elevation, and contact between bony prominences should be prevented.

- Necrotic tissue should be debrided.

- Wounds should be cleansed with saline upon discovery and at each dressing change.

- Antiseptic agents should be avoided and mechanical force minimized when cleaning.

- Select a dressing that will keep the wound continuously moist.

- The only adjuvant treatment that can be recommended is electrical stimulation.

- Antibiotic treatment is usually not recommended unless there are clinical signs of infection. Most Stage II, III; and IV ulcers are colonized with bacteria, but few progress to clinical infection.

- Surgical repair should be considered for Stage III or IV ulcers that do not respond to optimal care.

SOURCE: U.S. Department of Health and Human Services, *Treatment of Pressure Ulcers* (1994).

treatment is not recommended unless there are clinical signs of infection. If the patient has bowel or bladder incontinence, the wound should be kept as clean and dry as possible, to prevent infection, exacerbation of the wound, and additional ulcers. Attention should be paid to the patient's nutritional and fluid intake, as malnutrition and dehydration both contribute to ulcer development. The guidelines also recommend detailed protocols for pressure relief to prevent ulcer formation (U.S. Department of Health and Human Services 1994b).

Although pressure ulcers are often a complication of another acute or chronic condition, other secondary complications can occur. For example, a pressure ulcer may increase in size or severity, greatly limiting the patient's mobility. Severe ulcers may require surgical repair; some may become infected and require antibiotic treatment. Diligent nursing care usually can prevent these complications. However, some pressure ulcers cannot be prevented (such as those that appear in the late stages of a terminal illness).

8. Depression

Clinical depression is a significant problem in the elderly. Up to a third of hospitalized elderly patients have major depression or depressive syndromes (Koenig et al. 1988). The incidence of depression after stroke may approach 45 percent (Kolita et al. 1984). Moreover, depression appears to have an independent, negative effect on recovery of function (Covinsky et al. 1997). Many SNF patients also suffer from depression. Care of patients with depression may consist of psychotherapy, drug therapy, or a combination of the two.

Recommendations applicable to the treatment of SNF patients with depression suggest (1) performing an assessment of the patient's history of depression and current signs and symptoms, (2) evaluating and treating other conditions that may mimic the symptoms of depression, (3) performing a clinical evaluation for depression using standardized inventories, (4) developing a care plan considering both psychotherapy and pharmacotherapy, and (5) monitoring progress toward outcome goals and adjusting the treatment as necessary. The guidelines suggest a variety of drug treatments based on the patient's condition. Regular monitoring of the signs and symptoms of depression should be part of SNF care (American Medical Directors Association 1996b; and American Medical Directors Association 1998).

9. Pain

Patients in SNFs may suffer from a variety of pain syndromes, including acute pain (such as a surgical incision or a pressure ulcer), pain related to a malignancy, or chronic pain (such as back or joint pain). The goal of care should be adequate relief or at least the development of mechanisms that allow the patient to cope. Pharmacologic and nonpharmacologic therapy can be used to attain these goals. Table III.8 includes specific recommendations.

Guidelines for the treatment of pain in the elderly recommend that a pain assessment be done at the time of admission. The assessment should look for evidence of nonspecific signs and symptoms that suggest the presence of pain, including frowning, grimacing, bracing, increasing or recurring restlessness, agitation, eating or sleeping poorly, vocalizations, and loss of function. These signs and symptoms often are subtle and may be noticed only after the patient has been observed for some time.

Once the assessment has been completed, the goals of pain treatment should be established, with input from the patient or his or her advocate. Appropriate medications and nonpharmacologic treatments for the patient's chronic pain should be prescribed. Nonpharmacologic approaches include patient and caregiver education, cognitive-behavioral therapy, and exercises. Nonpharmacologic therapy used alone or in combination with appropriate pharmacologic strategies should be part of care plans for most chronic pain patients. The guidelines also recommend periodic, objective reevaluation of the patient's pain, using a validated pain scale; treatment should be adjusted as necessary (American Society of

TABLE III.8

RECOMMENDATIONS FOR THE CARE OF PATIENTS WITH CHRONIC OR CANCER PAIN

Recommendations for Care:

Evaluation and Treatment of Cancer Pain:[a]

- Physicians should first conduct a pain evaluation, using the patient as the source of information, if at all possible.

- Pain intensity should be monitored longitudinally, using standardized rating scales.

- Oral medications should be used as the first line of treatment in most patients.

- When analgesia with acceptable adverse effects is no longer attained orally or when oral administration is longer viable (inability to swallow and/or absorb medication), an alternate systemic route of administration should be chosen. The enteral route should be used in patients with percutaneous feeding tubes and inability to swallow, as long as absorption still occurs.

- Intramuscular injection is not recommended as either short- or long-term therapy for cancer pain management, because of the attendant discomfort, variable blood concentration, and fluctuating levels of analgesia.

- Opioids should not be withheld from cancer patients, for fear of producing respiratory depression, tolerance, physical dependence, or addiction.

Evaluation and Treatment of Chronic Pain:[b]

- Four general principles should be followed for prescribing pain-control medications in the long term care setting: (1) administer medication routinely (not as needed), (2) use the least invasive route of administration first, (3) begin with a low dose and titrate carefully until comfort is achieved, and (4) reassess and adjust dose frequently to optimize pain relief while monitoring and managing side effects.

- Acetaminophen should be the drug of choice for relieving mild to moderate musculoskeletal pain.

- Chronic use of the nonsteroidal anti-inflamatory drugs indomethacin, piroxicam, tolmetin, and meclofenamate is not recommended, because of the frequency of serious side effects.

- Opioid analgesic drugs are effective for relieving moderate to severe pain.

TABLE III.8 *(continued)*

Recommendations for Care:
• Opiod analgesics should not be withheld for fear of tolerance or addiction. Clinical experience has shown that long-term use of opioids for pain relief does not cause loss of control, tolerance, or addictive behavior as once thought.   • Nonpharmacologic approaches (for example, patient and caregiver education, cognitive-behavioral therapy, exercise), used alone or in combination with appropriate pharmacologic strategies, should be an integral part of care plans for most patients with chronic pain.   • Periodic, objective reevaluation of the patient's chronic pain should be done, using a validated pain scale; treatment should be adjusted as necessary.

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[a] American Society of Anesthesiologists (1996).

[b] American Geriatrics Society (1998); American Society of Anesthesiologists (1997); and American Medical Directors Association (1999).

Anesthesiologists 1996; American Society of Anesthesiologists 1997; American Geriatrics Society 1998; and American Medical Directors Association 1999).

C. RECOMMENDATIONS FOR NEEDED CARE

The literature review presented in this chapter provides much of the groundwork neccesary to develop indicators of needed SNF care. Although we found no clinical practice guidelines targeted specifically to the SNF setting, we did locate several guidelines applicable to the care of SNF patients. In general, the guidelines in this chapter make recommendations based on high-quality clinical evidence. They cover all aspects of care, from patient assessment and care planning to specific treatments and monitoring. Moreover, they make recommendations for needed care (that is, care that should be available to all patients) and not optimal, or "gold standard," care.

A number of the recommendations from these guidelines could be developed into indicators of access to needed care for SNF patients. By combining these recommendations with the description of the available sources of administrative data from Chapter II, we can now develop a list of those recommendations for needed care within the SNF that might be measurable using administrative data (see Table III.9). For each recommendation on this list, we have indicated (1) the strength of clinical evidence supporting it, (2) whether we believe the recommendation could be developed into a measurable indicator, and (3) whether the indicator could be measured using available administrative data.[11] We have also included a list of outcome measures, based on the clinical practice guidelines, that could perhaps be derived from administrative data (see Table III.10).

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[11] Several other important recommendations for patient care also could be developed into indicators of access to needed SNF care if the MDS included detailed information on patient medications.

TABLE III.9

PROCESS OF CARE RECOMMENDATIONS AND PRESENCE OF REQUIRED MEASUREMENT INFORMATION IN ADMINISTRATIVE DATA

Condition/Recommendations	Guideline and Strength of Evidence	Potentially Measurable?	Data Source(s)
Hip Fracture			
Patients should receive physical and occupational therapy to address physical functional deficits.	AOTA - consensus APTA - consensus	Yes	MDS data
Patient progress in rehabilitation should be monitored on a weekly or biweekly basis.	AOTA - consensus AAOS - consensus	-	-
The plan of care for rehabilitation of hip fracture patients should set realistic short- and long-term goals.	AAOS - consensus	-	-
Patients should be encouraged to walk whenever possible.	AAOS - consensus	-	-
Patients should be encouraged to follow postsurgical precautions.	AOTA - consensus	-	-
Use of a wheelchair should be considered for patients with severely compromised neurological, cardiac, or pulmonary status.	AAOS - consensus	-	-
Schedule therapy sessions during the part of the day when the patient is most productive.	AAOS - consensus	-	-
Stroke			
Patients with dysphagia on admission should be taught techniques to facilitate swallowing, as soon as possible.	AHCPR, *Post-Stroke Rehabilitation*--Grade C (supported by data from a nonrandomized study)	Yes	MDS data
Physical, occupational, and speech therapy should be provided, to addressed assessed functional deficits.	AHCPR, *Post-Stroke Rehabilitation*--Grade C (supported by data from a nonrandomized study)	Yes	MDS data[a] Claims data
Measures to prevent pressure ulcers and prevent skin breakdown should be initiated during acute care and continued throughout rehabilitation.	AHCPR, *Post-Stroke Rehabilitation*--Grade C (supported by data from a nonrandomized study)	Yes	MDS data
Adequacy of oral intake of food and fluids should be monitored regularly.	AHCPR, *Post-Stroke Rehabilitation*--Grade NA (not supported by research studies, but strong panel consensus)	Yes	MDS data
Patients should be assessed and treated for risk factors for recurrent stroke (such as hypertension, smoking, coronary artery disease).	AHA, *Supplement to Transient Ischemic Attack (TIA) Guidelines*--Grade C evidence (no randomized clinical trials)	-	-

TABLE III.9 *(continued)*

Condition/Recommendations	Guideline and Strength of Evidence	Potentially Measurable?	Data Source(s)
Patients with diagnoses of stroke and atrial fibrillation should receive long-term anticoagulation with warfarin or, if contraindicated, aspirin, to prevent stroke.	AHA, *Preventing Ischemic Stroke*--(ungraded, but supported by randomized trials)	-	-
Patients with stroke should receive daily aspirin.	AHA, *Preventing Ischemic Stroke*--(ungraded, but supported by randomized trials) ACCP, *Consensus Conference on Antithrombotic Therapy* (Grade A, supported by randomized trials)	-	-
Patients with stroke and coronary artery disease should receive a cholesterol-lowering drug.	AHA, *Preventing Ischemic Stroke*--(ungraded, but supported by randomized trials)	-	-
Patients with ischemic stroke should receive prophylaxis against deep venous thrombosis with low-dose subcutaneous heparin, low molecular weight heparin, heparinoids, or intermittent pneumatic compression devices.	ACCP, *Consensus Conference on Antithrombotic Therapy*--Grade A (supported by randomized trials) AHCPR, *Post-Stroke Rehabilitation* - Grade A (supported by two or more randomized controlled trials)	-	-
Risk of falling should be assessed on admission and updated regularly.	AHCPR, *Post-Stroke Rehabilitation*--Grade NA (not supported by research studies, but strong panel consensus)	-	-
Persistent urinary incontinence after stroke should be evaluated to determine its etiology, and a cause-specific treatment should be implemented.	AHCPR, *Post-Stroke Rehabilitation*--Grade C (supported by data from a nonrandomized study)	-	-
Bowel management programs should be implemented in patients with persistent constipation or bowel incontinence.	AHCPR, *Post-Stroke Rehabilitation*--Grade B (supported by data from one randomized study or two or more nonrandomized studies)	-	-
Congestive Heart Failure			
Volume overload should be treated with diuretics and reduced dietary sodium intake.	AHCPR, *Heart Failure*--Grade C (expert opinion) AHA, *Heart Failure*--Class I (usually indicated, always acceptable)	Yes	MDS data
Monitor for weight changes.	AHCPR, *Heart Failure*--Grade C (expert opinion)	Yes	MDS data
Monitor for abnormal laboratory values.	AMDA, *Heart Failure*--ungraded, based on expert	Yes	MDS data

TABLE III.9 *(continued)*

Condition/Recommendations	Guideline and Strength of Evidence	Potentially Measurable?	Data Source(s)
	consensus		
Angiotensin-converting enzyme (ACE) inhibitor medication should be prescribed for all patients unless contraindicated. Patients with contraindications to ACE inhibitors should be treated with isosorbide dinitrate and hydralazine in combination.	AHCPR, *Heart Failure*--Grade A (evidence from randomized controlled trials or cohort studies) AHA, *Heart Failure*--Class I (usually indicated, always acceptable)	-	
Consider the use of digoxin for patients with moderate to severe heart failure and some patients with mild heart failure.	AHCPR, *Heart Failure*--Grade C (expert opinion) AHA, *Heart Failure* --Class I (usually indicated, always acceptable)	-	-
Patients with diagnoses of congestive heart failure and atrial fibrillation should be treated with warfarin or, if contraindicated, aspirin.	AHCPR, *Heart Failure*--Grade C (expert opinion) AHA, *Heart Failure*--Class I (usually indicated, always acceptable)	-	-
	Pneumonia		
Patients with suspected community-acquired pneumonia should receive a chest X-ray to confirm the diagnosis.	IDSA, *Community-Acquired Pneumonia*--Grade II (supported by at least one nonrandomized trial)	Yes[b]	MDS data Claims data
Almost all patients with pneumonia require antibiotic treatment.	IDSA, *Community-Acquired Pneumonia*--Graded[c]	-	-
	Diabetes		
Depending upon the patient, blood glucose should be controlled using insulin, oral agents, or medical nutritional therapy.	Minneapolis/St. Paul Diabetes Educators, *Diabetes in Long-Term Care*--consensus	-	-
Patients with diabetes should have their feet inspected daily.	Minneapolis/St. Paul Diabetes Educators, *Diabetes in Long-Term Care*--consensus	Yes	MDS data
Patients using insulin or oral glycemic control agents need to have their blood glucose levels monitored on a regular basis.	Minneapolis/St. Paul Diabetes Educators, *Diabetes in Long-Term Care*--consensus	-	-

TABLE III.9 *(continued)*

Condition/Recommendations	Guideline and Strength of Evidence	Potentially Measurable?	Data Source(s)
Urinary Incontinence			
Behavioral therapy (including toileting assistance, bladder retraining, or pelvic muscle rehabilitation) usually should be offered as the first line of therapy.	AHCPR, *Urinary Incontinence*--some evidence from clinical studies but mostly Grade C (expert opinion)	Yes	MDS data
The plan of care for patients diagnosed with chronic urinary incontinence should include a plan for protecting skin integrity.	AHCPR, *Urinary Incontinence*--Grade B (supported by evidence from properly designed and implemented studies)	Yes	MDS data
Some patients with urinary incontinence may benefit from drug therapy.	AHCPR, *Urinary Incontinence*--Grades A and B (supported by evidence from properly designed and implemented controlled and noncontrolled studies)	-	-
Pressure Ulcers			
The plan of care for patients diagnosed with pressure ulcers should include a plan for protecting skin integrity.	AHCPR, *Treatment of Pressure Ulcers*--Grade C (supported by one controlled trial, two or more case series or descriptive studies, or expert opinion)	Yes	MDS data
The plan of care for patients diagnosed with pressure ulcers should include a plan for ensuring proper nutrition.	AHCPR, *Treatment of Pressure Ulcers*--Grade B (supported by two or more controlled trials)	Yes	MDS data
The plan of care for patients diagnosed with pressure ulcers should include a plan for ensuring pressure relief.	AHCPR, *Treatment of Pressure Ulcers*--Grade C (supported by one controlled trial, two or more case series or descriptive studies, or expert opinion)	Yes	MDS data
Necrotic tissue should be debrided.	AHCPR, *Treatment of Pressure Ulcers*--Grade C (supported by one controlled trial, two or more case series or descriptive studies, or expert opinion)	-	-
Wounds should be cleansed with saline when first discovered and at each dressing change.	AHCPR, *Treatment of Pressure Ulcers*--Grade C (supported by one controlled trial, two or more case series or descriptive studies, or expert opinion)	-	-
A wound dressing should be selected that will keep the ulcer continuously moist.	AHCPR, *Treatment of Pressure Ulcers*--Grade B (supported by two or more controlled trials)	-	-

TABLE III.9 *(continued)*

Condition/Recommendations	Guideline and Strength of Evidence	Potentially Measurable?	Data Source(s)
	Depression		
Patients diagnosed with depression should receive therapy, psychiatric consultation, or treatment with antidepressant drugs.	AMDA, *Depression*--expert consensus	Yes	MDS data Claims data
	Pain		
Pain control should be reevaluated periodically.	ASA, *Cancer Pain*--expert consensus ASA, *Chronic Pain*--expert consensus AGS, *Chronic Pain*--expert consensus	Yes	MDS data
Use of opioid drugs should be considered for patients with severe pain.	ASA, *Cancer Pain*--expert consensus ASA, *Chronic Pain*--expert consensus	-	-
Oral medications should be the first line of treatment for pain.	ASA, *Cancer Pain*--expert consensus ASA, *Chronic Pain*--expert consensus AGS, *Chronic Pain*--expert consensus	-	-
Intramuscular injection is not recommended for either short-term or long-term pain therapy.	ASA, *Cancer Pain*--expert consensus	-	-
Acetominophen should be the drug of choice for mild to moderate musculoskeletal pain.	ASA, *Chronic Pain*--expert consensus	-	-
Chronic use of nonsteroidal, anti-inflammatory drugs is not recommended.	ASA, *Chronic Pain*--expert consensus	-	-
Nonpharmacologic approaches should be an integral part of care plans for most chronic pain patients.	ASA Chronic Pain--expert consensus AGS *Chronic Pain*--expert consensus	-	-

AOTA = American Occupational Therapy Association
APTA = American Physical Therapy Association
AAOS = American Academy of Orthopedic Surgeons
AHA = American Heart Association
ACCP = American College of Chest Physicians
AHCPR = Agency for Health Care Policy and Research
IDSA = Infectious Diseases Society of America
AMDA = American Medical Directors Association
ASA = American Society of Anesthesiologists

TABLE III.9 *(continued)*

AGS = American Geriatrics Society

[a] Measurement of this recommendation could require linking MDS and claims data. Although technically possible, this task may be quite difficult.

[b] Using MDS and claims data, it is possible to identify SNF patients who have had a diagnosis of pneumonia in the last 30 days and have a claim for a chest X-ray. However, we would be unable to measure the number of SNF patients who were suspected as having pneumonia but were never diagnosed, or the number of patients who were suspected of having pneumonia and were X-rayed, and the diagnosis was ruled out.

[c] The decision whether or not to use antibiotics and the selection of an antibiotic are highly dependent on the patient and the etiology of the pneumonia. This guideline presents evidence for a variety of bacterial agents and antibiotic choices.

TABLE III.10

OUTCOME MEASURES AND SOURCE OF MEASUREMENT INFORMATION IN ADMINISTRATIVE DATA

Condition/Outcome Measure	Data Source(s)
Hip Fracture	
Fall (not requiring hospitalization)	MDS data
Deterioration in ADLs during SNF stay	MDS data
ED visit/Hospital admission for hip dislocation for patients treated with hemiarthoplasty	MDS data Claims data
ED visit/Hospital admission for wound infection	MDS data Claims data
ED visit/Hospital admission for deep venous thrombosis or pulmonary embolism	MDS data Claims data
ED visit/Hospital admission for fall	MDS data Claims data
Stroke	
Fall (not requiring hospitalization)	MDS data
ED visit/Hospital admission for deep venous thrombosis or pulmonary embolism	MDS data Claims data
ED visit/Hospital admission for fall	MDS data Claims data
ED visit/Hospital admission for aspiration pneumonia	MDS data Claims data
Congestive Heart Failure	
ED visit/Hospital admission for exacerbation of congestive heart failure	MDS data Claims data

TABLE III.10 *(continued)*

Condition/Outcome Measure	Data Source(s)
Diabetes	
Development of a urinary tract infection	MDS data
Development of pressure ulcer	MDS data
Development of stasis ulcer	MDS data
ED visit/Hospital admission for hypoglycemia or hyperglycemic hyperosmolar nonketotic syndrome	MDS data Claims data
Urinary Incontinence	
Development of a urinary tract infection	MDS data
Development of pressure ulcer	MDS data
Pressure Ulcers	
Progression of Stage I or II wound to Stage III or IV wound on reassessment	MDS data
Stage III or Stage IV wound discovered after initial MDS assessment	MDS data
Pain	
Improvement in pain status	MDS data

IV. EXPERT OPINIONS ON DEVELOPMENT OF INDICATORS

After detailing the methods we used to identify experts and conduct interviews, we present the experts' opinions on defining and measuring necessary SNF care. We first discuss the experts' thoughts on hospitalized patients for whom SNF care may be necessary, and on hospital discharge planning. We then describe the experts' views on necessary care for patients in SNFs. In general, there was some, though far from unanimous, support among the experts for both aspects of the concept of necessary SNF care, as well as for the development of measurable indicators. The chapter concludes with a section on the experts' observations on the effects of SNF PPS and recent trends in the SNF industry.

A. METHODS

We sought experts on the clinical issues involved in hospital discharge planning and SNF care, as well as on administrative data. For clinical expertise, we targeted the following professionals: hospital discharge planners, SNF admission coordinators, physical therapists, occupational therapists, geriatricians, wound and ostomy care nurses, nephrologists, gerontologic nurse practitioners, orthopedic surgeons, psychiatrists, gerontologists, hospitalist physicians, and social workers. For administrative data expertise, we focused on MDS authorities, health policy and health services researchers, and staff from HCFA fiscal intermediaries.

1. Recruiting Expert Respondents

We identified potential interviewees primarily through (1) reputation, and (2) referral from national organizations. We thus contacted 13 experts who had published widely and had established reputations in the fields of gerontology, nursing home care, or SNF health care policy. We also contacted 15 national organizations representing many of the professional disciplines listed in the preceding paragraph, as well as two nursing home trade organizations disciplines listed in the preceding paragraph, as well as two nursing home trade organizations and one large Medicare fiscal intermediary. Experts and organizations were mailed or faxed letters explaining the study (Appendix F). Only two of the experts we contacted declined to participate. Only one of the organizations that we contacted failed to respond, and another (the Medicare fiscal intermediary) could not divulge its review criteria. The remaining organizations connected us to one or more experts.[1] We conducted 27 telephone interviews with 37 people (some were group interviews, conducted as conference calls).[2] To ensure a uniform approach, all three of the project researchers conducted the first few interviews jointly. Most of the remaining interviews were then conducted by the individual researchers, except for two group interviews with several experts who spoke to us through arrangements with national organizations. For these interviews, two or three MPR researchers would participate in a conference call with a group of experts. The interviews ranged in duration from 45 to 90 minutes, with most lasting about an hour. A research analyst took notes and prepared written summaries. We also supplemented our formal interviews with brief informal conversations with staff members at a local SNF (a member of a large for-profit chain). Table IV.1 lists basic profile information on the people interviewed.

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[1] All the organizations first obtained permission from the experts for us to contact them, so there were no refusals among the experts referred by the organizations.

[2] Some interviews involved only one person, and others involved several people, but each interview resulted in only a single opinion, so we use the terms "expert," "respondent," and "interviewee" below to refer to each *interview*, not to each individual person.

TABLE IV.1

PROFILES OF EXPERT RESPONDENTS

Discipline	Additional Experience/Expertise	Title or Position	Referral Source	Number of Respondents
Geriatrics	Health services research	Assistant professor of medicine	Reputation	1
Geriatrics	Nursing home care	Professor of medicine	Reputation	1
Geriatrics	Health policy research Quality of subacute and long-term care	Assistant professor of medicine	Reputation	1
Geriatrics	Nursing home medical director	Corporate medical director	AMDA	1
Health care administration Geriatrics	SNF administrator Rehab hospital administrator in an integrated hospital and health system	Executive vice-president (fiscal) Medical director, long term care services	AHA	2[a]
Health care consultant	Long term care consultant Former nursing home administrator Former director, state nursing home licensing and survey agency	Primary partner, long term care consulting firm	AHCA	1
Health policy	Measurement of long term care quality MDS expert	Director, research, university center on health care quality	Reputation	1
Health policy research	Medicare SNF and home health reimbursement	Researcher	AHA	1
Health policy research	Gerontology Long-term care	Professor of public health	Reputation	1
Health policy research	Long term care policy Home health care policy Hospital administration	Senior research associate, health policy research organization	Reputation	1
Internal medicine	Hospitalist medicine	Director, inpatient medical service	NAIP	1
Nephrology	Outcomes of hemodialysis	Professor of medicine	NKF	1
Nonprofit SNFs	Health policy Access/reimbursement MDS	Trade industry group staff members	AAHSA	3[a]
Nursing	Case management consultant	Vice-president, consulting firm	CMSA	1
Nursing	Gerontologic advanced practice nursing Postacute care Discharge planning	Professor of nursing	Reputation	1
Nursing	Case management Acute hospital case management	Hospital case manager	CMSA	1
Nursing	Wound, ostomy, and continence nursing SNF administration	Director of nursing	WOCN	1
Nursing	SNF admission coordinator	SNF admission coordinator	AANAC	1
Occupational therapy	Federal health policy Reimbursement and regulatory policy Geriatric rehabilitation, effectiveness of occupational therapy interventions Health care systems Occupational therapy in SNFs Occupational therapy in SNFs Occupational therapy in SNFs Occupational therapy in SNFs	Director, federal affairs department Staff members, reimbursement and regulatory policy department Professor of occupational therapy Professor of occupational therapy Practicing occupational therapist, private placement Practicing occupational therapist Practicing occupational therapist Practicing occupational therapist	AOTA	8[a]
Orthopedics	Managed care Starting and running a large IPA Health care consultant	Private practice of orthopedist	AAOS	1
Orthopedics	Outcomes research	Professor and chair, department of orthopedics	AAOS	1
Physiatry	Federal health policy	Medical officer, HCFA	Reputation	1
Physiatry	Geriatric rehabilitation Outcomes in rehabilitation	Assistant professor of physical medicine and rehabilitation medicine	Reputation	1

TABLE IV.1 *(continued)*

Discipline	Additional Experience/Expertise	Title or Position	Referral Source	Number of Respondents
Physical therapy	Consultant PPS expert MDS expert	Manager, physical therapy services	APTA	1
Psychology	Gerontology Quality measurement and improvement Nursing home chain executive	Vice-president, outcomes management	Reputation	1
Social work	Health care consultant Hospital administration Nursing home chain executive	Co-chief executive officer, consulting firm	AHCA	1
Social work	Health policy	Senior staff associate	NASW	1

[a]Conference call.

AAHSA = American Association of Homes and Services for the Aging; AANAC = American Association of Nurse Assessment Coordinators; AAOS = American Academy of Orthopaedic Surgeons; AHA = American Hospital Association; AHCA = American Health Care Association; AMDA = American Medical Directors Association; AOTA = American Occupational Therapy Association; APTA = American Physical Therapy Association; CMSA = Case Management Society of America; HCFA = Health Care Financing Administration; IPA = independent practice association; MDS = Minimum Data Set; NAIP = National Association of Inpatient Physicians; NASW = National Association of Social Workers; NKF = National Kidney Foundation; PPS = prospective payment system; SNF = skilled nursing facility; WOCN = Wound, Ostomy, and Continence Nurses Society.

2. Interview Goals and Content

The interviews had multiple goals. We wanted the experts to bear in mind the ultimate goal of translating indicators into administrative data while:

- Describing patients for whom they believed SNF admission to be necessary
- Listing adverse outcomes for which the patients would be at risk if they were not admitted to a SNF
- Detailing necessary care for patients admitted to a SNF
- Citing adverse outcomes that might occur if patients did not receive this necessary care

A secondary goal, time permitting, was to have the experts comment freely on a number of topics. These included the effects of SNF PPS, current trends in the SNF industry, and issues affecting different types of SNFs (such as facilities that were urban versus rural, for-profit versus nonprofit, or vertically integrated versus freestanding).

At the start of each interview, we provided explanations and instructions. First, we explained that we were exploring clinically based indicators that might become part of a monitoring system. Such a system could help alert policymakers to *potential* access problems to SNF care by tracking rates of SNF use and adverse events among patients for whom SNF care appeared necessary, and rates of avoidable adverse events among patients already in SNF care. We made clear that the indicators would undoubtedly misclassify some patients but do so, we hoped, in a way that would still allow unbiased comparisons for policy purposes (such as comparisons across time periods, geographic regions, or demographic subgroups). We stressed that the proposed indicators and monitoring system were *not* meant to be definitive measures of policy impacts, and certainly not normative standards of practice.

Second, we asked the experts to restrict their attention to hospitalized patients needing SNF care following hospital discharge. We had three main reasons for not including patients with "post-hospital pre-SNF" gaps, that is, patients discharged from the hospital to another setting (such as home or rehabilitation hospital) before their SNF admission. First, such patients are few, as the great majority of SNF patients are admitted directly from a hospital stay. Second, this small group of patients is very heterogeneous. For some, the delayed SNF admission may have been planned. They may have gone home first for a period of recuperation before entering a SNF for therapy, or they may have gone to a rehabilitation hospital first, anticipating the need for additional SNF care afterward. For others, the subsequent SNF stay may have been unplanned. prompted perhaps by an unanticipated adverse event or poor course of recovery. Third, even though processes and outcomes of care in the SNF for patients with a post-hospital pre-SNF gap will likely depend on events during the gap, the availability of data (if any) for this period will vary widely. Depending on their post-hospital pre-SNF experience, patients may or may not have any of the following types of claims: home health agency, rehabilitation hospital, physician, or other Part B.

Our final instruction to the experts was to keep in mind the administrative data that are available. For hospitalized patients these consist of Medicare Part A and Part B claims up to and including the index hospitalization. For patients in SNFs, these include the Part A and B claims, and separately, MDS data.[3]

Although the interview format generally followed that outlined in Table IV.2, we did not follow a rigid interview protocol. We were uncertain about the types of patients the experts might identify as needing SNF admission, or the types of SNF care they might view as necessary. In fact, the open-ended nature of several of the questions yielded valuable

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[3] As discussed earlier, there are major barriers to linking MDS and claims data. We asked the experts to assume that the claims and MDS data would not be linked.

TABLE IV.2

GENERAL FORMAT FOR EXPERT INTERVIEWS

1.	Did you receive our letter? Do you have any questions about our project?
2.	Could you please describe your background in SNF health care or health care policy and your current position or practice setting?
3.*	Our interest is only in patients covered by the Medicare Part A postacute SNF benefit, not in long-term care, custodial care, or Medicaid-covered nursing home patients. Among hospitalized inpatients ready for discharge, do you think there are patients for whom it is truly necessary to be in a SNF? By necessary, we mean patients for whom it would be *wrong not to* transfer them to a SNF; that is, patients for whom it would be wrong to send them home and who would likely suffer a bad outcome if sent home?
4a. 4b.*	(If no) Why not? [Move on to Question 8]. (If yes) Could you describe these patients?
5.*	Now I want you to think about Medicare claims data. The claim for the hospital stay will contain primarily a list of diagnoses and some information on the hospital stay, such as procedures and surgeries; ICU stays, if any; major radiology tests; and whether any therapy was provided. Do you think you could use this information to characterize the patient(s) you described earlier?
6.*	What might happen to these patients whom you feel need SNF admission if they were not, in fact, transferred to a SNF from the hospital, but were instead discharged home?
7.	How might we measure these outcomes in claims data?
8.*	Now, let's say the patient has indeed been admitted to a SNF. Are there certain essential types of care that everyone should receive?
9a.* 9b.*	(If no) Why not? (If yes) Could you list them for me?
10.*	What might happen to patients if they did not receive this care?
11.*	Are there measures we could use to detect inadequate or poor-quality care?
12.*	Remember we are going to be using administrative data, which essentially means the MDS (and possibly SNF claims). How could we implement these measures you've just mentioned in MDS, or are there other variables or outcomes in MDS we should think about as indicators of poor care?
13.*	Are there certain patients who are having a harder time getting a SNF bed since PPS? Who are they?
14.*	Tell me if care in your setting/facility has changed since PPS, and if so, how.
15.*	Do you think things are different for [urban/rural areas?] [for-profit/nonprofit facilities?] [SNFS that are part of an integrated health system?] Why?

NOTE: This interview was not rigidly structured. The questions marked with asterisks would often prompt unstructured conversation.

information through the respondents' spontaneous comments, suggestions, and free-flowing conversation.

B. HOSPITAL DISCHARGE PLANNING AND NECESSARY SNF ADMISSION

The experts expressed a range of opinions on (1) whether one could even define certain SNF admissions as necessary, and (2) whether one could use administrative data to identify patients for whom such admissions were necessary. Eighteen of the original 27 experts expressed at least some degree of support for the first idea, 6 disagreed, and 4 did not venture a firm opinion one way or the other. Of the 18 experts supporting the first idea, 12 supported the second one and suggested ways of using administrative data.

The experts *did* agree on the basic set of patient-level factors that tend to *influence* the decision to send patients to SNFs. The differences of opinion arose over whether any patients could be said to be in absolute need of SNF admission, and whether the basic set of patient-level factors could be said to define or determine need.

1. Basic Patient-Level Factors That Influence the Decision to Discharge to a SNF

According to the experts, the major broad categories of factors that are considered in the SNF placement decision for a given patient are (1) the level of care or services needed after discharge, (2) the level of care or services that can be provided at home, and (3) the preferences of the patient and the patient's family. Discharge planners begin to consider the SNF option when it appears that the level of care or services needed will strain or exceed what can be provided at home.

The level of care needed after discharge depends greatly on certain patient characteristics, which can be divided into those already present before the acute illness and hospitalization (that is, "baseline" characteristics) and those occurring during or as a result of it. Relevant baseline characteristics include a patient's age, functional status, comorbid illnesses, and home layout. (These and other characteristics are discussed in more detail later in this chapter.) The characteristics are important for two reasons: (1) they establish the chronic level of need on which additional needs from the acute illness will be superimposed; and (2) they determine the patient's physiologic reserve or vulnerability and, therefore, the magnitude of the health and functional impacts of the acute illness. Relevant characteristics occurring during or after the acute illness include the principal diagnosis or procedure, intensive care unit (ICU) stays, postoperative complications, acute cognitive or functional declines, and ongoing postacute medical treatment or monitoring needs (such as intravenous [IV] medications, frequent checks of vital signs and fluid status, and complex wound care). All these characteristics are associated with postacute needs, as direct causes of certain needs, as causes of worsened health and function, or merely as markers of more severe illness and disability.

In contrast to the level of care needed after discharge, the level of care that can be provided at home depends primarily on the ability of the patient or his or her social support system to "rise to the occasion," the patient's financial resources (to pay for any additional help necessary), and the availability and resources of home health agencies and community service agencies. A frail elderly woman with a healthy, involved, and capable daughter living close by obviously has stronger social support than does the same frail elderly woman with only a frail elderly husband disabled by Parkinson's disease or dementia. Some areas may have many home health agencies that provide a broad array of IV and therapy services; other areas may have fewer agencies that offer limited services. Some therapists mentioned the issue of whether a patient might need therapy equipment generally available only in SNFs or clinics and difficult to transport to patients' homes, but they did not feel this was a major consideration.

Finally, the preferences of patients and their families are crucial. A patient may have overwhelming needs for care that would seem to make SNF placement the only reasonable option, but the patient and the family may insist on discharge to home.

The experts disagreed somewhat about the relative importance of all these factors in the SNF placement decision. For example, one expert believed functional status at the time of discharge was the single overriding determinant, whereas another cited the strength of the social support system. Others felt that the interplay of multiple factors was more important than any single factor.

2. Patients for Whom SNF Admission Is Necessary

As mentioned, most of the experts, whom we will call the "supportive experts," agreed that certain patients do indeed need post-hospital SNF care. These patients need care that is very difficult to administer at home, tend to fare badly if sent home, and are better off in a SNF. The experts initially offered numerous nonspecific descriptions of the patients, which we list here because they convey an impression of what the patients are like:

- Major events with multiple serious coexisting comorbidities
- Marginal premorbid functional status
- Needs for intensive rehabilitation
- Heart attack with need for rehabilitation and restoration of health
- Severe interruptions in ADLs
- Major changes in cognitive status, or significant or new behavior problem
- Complex degenerative diseases and significant inability to manage symptoms
- Needs for ongoing professional assessment
- Unwilling, inaccessible, or unavailable social support and, therefore, not safe to go home
- Needs for complex, continued monitoring; professional assessment; and education of patient and family

- Clinically complex patients, needing more than one hour of home care nurse's time
- Major surgical procedures with wounds requiring extensive care
- Medically complex issues, so person may want to use a SNF to make the transition from skilled to long-term care

Later, we discuss some more specific variables the experts came up with.

Six experts acknowledged that the basic patient-level factors listed in Section B.1 often influence discharge destination. However, they believe either that these factors could not reliably distinguish between necessary and unnecessary SNF admissions or that there are no truly necessary SNF admissions. We call these people "dissenting experts." Their objections fell into four general areas: (1) patient needs are too varied; (2) SNFs are too varied; (3) patient-level factors matter, but non-patient-level factors ultimately determine discharge destination; and (4) among the different types of postacute provider, SNFs produce the worst outcomes and therefore are not appropriate for anybody. We elaborate on each objection below.

a. Patient Needs Are Too Varied

The first objection is that patient needs simply are too individual and complex to codify into clinical indicators or guidelines. As one expert observed, "It would be great if one could say [a] SNF is for someone who needs daily care, home health care is for someone who needs intermittent care, and so on; however this is not the case. Things are not so black and white—there are lots of grey areas—there are too many intangibles." According to another expert, "Good discharge planning incorporates so many individual variables that it would be impossible to capture them all." The experts subscribing to this objection asserted, "There isn't a situation where you couldn't care for someone at home." They also said, "Virtually everybody can be cared for at home, if they have enough money." However, they did concede that, as a practical matter, most people who need help after leaving the hospital but who lack an able caregiver typically enter a SNF.

In response to this objection, we make two observations. First, although it is true that, given enough resources, patients with nearly any condition theoretically can be cared for at home, the care required for many conditions will overwhelm even the most dedicated of families. Second, the larger group of supportive experts evidently believed that sufficient numbers of subgroups of patients with common features could be identified to make generalizations, despite the variability in patients' individual characteristics.

We believe that this objection may reflect the resistance that guidelines, standards, and indicators often engender among health care professionals. Many providers feel that such efforts are overly formulaic and represent a "cookbook" approach that can never capture the true complexities of practice (Tunis et al. 1994). Although, as described in Section A.2, we tried to clarify to the interviewees that our goals were merely to explore the possibility of a monitoring system for policymakers, this explanation may have failed to overcome the experts' uneasiness at attempts to categorize or classify patients as needing one thing or another.

b. SNFs Are Too Varied

Experts expressing this concern believe that the capability and quality of SNFs vary too much to allow broad statements that certain patients should enter SNFs. In the words of one expert, a former nursing home director and former director of a state nursing home survey and certification agency, "The question [of what sort of patient belongs in a SNF] cannot be answered, because of the enormous variety in the 'core competencies' of nursing home staffs." This concern relates to one of the project challenges mentioned in Chapter I (specifically, that there may not be sufficient agreement on what "SNF care" is).

A former state agency director epitomized this uncertainty well by distinguishing between the extremes of what she called "busy," or high-acuity, and "nonbusy," or low-acuity, SNFs. Busy SNFs have a constant flow of Medicare admissions and discharges. The nursing staff is competent and certified in IV therapy and perhaps in ventilator care and advanced cardiac life support. These SNFs can handle, for example, daily laboratory testing for patients who need frequent adjustments in anticoagulant medication. This expert felt that patients discharged from the hospital with central venous catheters or with needs for IV therapy, complex wound care, or ongoing laboratory, X-ray, or electrocardiographic services belong only in high-acuity SNFs, which can handle this level of acute care.

Nonbusy SNFs, in contrast, do an excellent job with patients who need routine therapy for uncomplicated fractures or deconditioning from a hospital stay, but they do not specialize in complex, high-acuity care. Many of these SNFs have become Medicare certified only because their state Medicaid conditions of participation require certification, or because they want to be able to bring home their own long term care residents hospitalized for, say, pneumonia, and discharged to a Medicare SNF stay. Without the Medicare certification, these residents would have to go to other facilities before returning to their home facility. According to this expert, in addition to these long term care patients, patients who need therapy or routine management but who lack adequate home support or access to home health agencies with the necessary therapy services are appropriate for nonbusy SNFs.

Two experts also mentioned this contrast between high-acuity and low-acuity facilities. One expert remarked that, although many SNFs are "hyped" as providing "subacute" or transitional care, it is difficult, at least for policy researchers, to determine easily which facilities are truly active in subacute care. This expert cited previous efforts to categorize SNFs on the subacute spectrum by such variables as percentage of Medicare admissions or patient days, or percentage of staff devoted to rehabilitation (Kane et al. 1996b). The other expert commented that the SNF industry is not sure whom it is serving. Some facilities describe themselves as "skilled," even though they actually provide more intermediate or long-term care, whereas others truly do serve a complex, postacute population. This expert (a nonclinician researcher in the area of health quality measurement) was skeptical about the feasibility of clinical indicators, because the second type of care is relatively new and few standards have been developed.

All the dissenting experts who raised this concern had a policy or government background, whereas all the supportive experts—the majority of our respondents—had clinical backgrounds. This distinction led us to wonder whether the differences in opinion were largely the result of the "macro" view of those in the policy environment versus the "micro" view of those in a patient care environment. Since the goal of our study was to investigate clinically based indicators, it is encouraging that the issue of SNF variability did not deter clinicians from accepting the concept of "necessary SNF admission." Furthermore, the factors the experts named as indicating need for SNF care (which we list later), range from poor home support to complex care needs, and thus incorporate patients appropriate for both the low- and high-acuity SNFs described by our former state official expert.

c. Non-Patient-Level Factors Are Better Predictors of Discharge Destination

In their arguments against the feasibility of clinically based indicators of necessary SNF admission, some of the dissenting experts pointed to previous research showing that discharge destination depends largely on non-patient-level factors. Previous studies have shown that even highly detailed information on patient-level variables adds at best a modest ability to predict the postacute setting to which patients are discharged (Kane et al. 1996a).[4] In addition, the widespread geographic variations in SNF use presumably reflect the importance of non-patient-level factors, such as provider preferences, practice variations, differences in SNF bed supply, and Medicare fiscal intermediary coverage policies (Neu et al. 1989; and Liu et al. 1998). As one expert observed, "[The decision on the postacute setting] is too highly dependent on other, nonclinical factors. [There is] too much nuance and too much variance from all the other nonclinical factors."[5] Another expert went so far as to call typical hospital discharge planning "a random process" governed by a "chaos principle."

As we have said before, however, we see the goal of this project as searching for factors that, *in the experts' opinion,* indicate *clinical necessity,* rather than as identifying or confirming factors that are actually predictive of *existing* patterns of discharge. Despite the differing aims of the two approaches, however, the factors identified by each should often coincide, since a significant proportion of patients discharged to SNFs presumably need SNF admission.

d. SNFs Produce the Worst Outcomes and Are Thus Inappropriate for Anybody

"Who needs SNF care? The answer is no one. All the previous work shows that people do worse in SNFs." This last and somewhat iconoclastic objection is based primarily on two recent articles (Kane et al. 2000 and 1998). The studies used nonexperimental data (that is, data from actual observed patterns of care in which patients were not randomly assigned to different interventions) to compare the functional outcomes of Medicare beneficiaries with certain conditions across four postacute settings: (1) rehabilitation hospital, (2) SNF, (3) home health care, and (4) home without home health care.[6] Both articles used the same data, which were collected in 1988 and 1989 from 52 hospitals in three cities. Because patients referred to SNFs tend to be more chronically ill and impaired than patients referred to the three other postacute settings, a straightforward comparison of outcomes does not provide a valid comparison of the true effects of the four settings. The studies thus used an econometric technique known as "instrumental variables estimation" in an attempt to remove the effects of the systematic differences among the groups of patients.

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[4] The variables analyzed by Kane et al. (1996a) included demographic information, diagnostic information, functional impairment, cognitive impairment, severity of illness, laboratory data, burden of comorbid conditions, pre-hospitalization living arrangements, and prior dependence on a caregiver.

[5] By "nonclinical," this expert was referring to the local and market variables that we have called "non-patient-level" variables.

Given their supporting evidence, we view the conclusions of these articles as still requiring additional confirmation. The data are slightly more than a decade old and may no longer reflect the current postacute care system. A detailed examination of the results also raises some concerns over whether the instrumental variables technique was completely successful in removing the effects of the systematic differences in the patient population, or in reducing the role of chance to a reasonable level in the estimated effects of the different settings.

e. Additional Suggestions by Experts

Despite her belief that clinically based indicators were unrealistic, one of the skeptical experts did suggest two indicators that she felt might be worth investigating. The first idea, which applied to beneficiaries admitted to SNFs, was to calculate distances between the codes of beneficiaries' home addresses and the codes of SNFs to which they were admitted. An increase in the mean or median distances might suggest placement problems. The second idea was to create a five percent file of hospitalized beneficiaries within broad diagnostic categories (such as the Major Diagnostic Categories in the hospital PPS) and to calculate the proportion admitted to SNFs and the mean length of stay (LOS) of the admitted beneficiaries within age categories, by geographic area, adjusting for those admitted to rehabilitation hospitals. Tracking this indicator over time would not allow one to disentangle access and utilization, but it might be useful in conjunction with the first indicator.

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[6] The study conditions were ones for which Medicare beneficiaries are commonly referred for postacute care. Kane et al. (1998) studied two conditions: (1) stroke, and (2) hip fractures. Kane et al. (2000) studied five conditions: (1) stroke, (2) chronic obstructive pulmonary disease, (3) CHF, (4) hip procedures, and (5) hip fracture.

Two experts, both based in SNFs, also commented that the idea of "needed SNF care" depends on hospitals' discharge policies. As one observed, "Well, if hospitals have trouble placing people, they'll just stay in the hospital longer, get stronger, and then maybe they'll be able to go home and won't need to go to a SNF." Another expert described the reluctance of most SNFs in the area to accept patients with respiratory therapy needs, which could be explained by the fact that PPS had caused the SNFs to let their respiratory therapists go. The hospital LOS of these patients had therefore increased. As the expert pointed out, however, the increased LOS was not inappropriate if some hospitals might have previously been discharging people in unstable conditions too early.

3. Using Administrative Data

Twelve of the 18 experts who supported the idea that SNF admission is a necessity for some patients were willing to entertain the notion that administrative data could adequately identify the patients or the adverse events that might result from not entering a SNF. Three believed administrative data to be unsuitable for such an effort, and nine were unsure or did not comment. As we discussed in Chapter II, the administrative data available to study these issues are from the Medicare EDB file and Medicare Part A and B claims, with variables as outlined in Appendix A.

The experts, both those who were optimistic about the potential of administrative data and those who were pessimistic, felt equally strongly about the importance of the key information that is absent in claims data—patient functional status and social situation. However, the two groups disagreed over whether the missing elements could be proxied by the primarily diagnostic and demographic information that *is* present in claims data.[7]

All the pessimistic experts voiced similar protests: "It's *not* the diagnoses, it's the *function*!" for example or, "Diagnosis is of very little value and is a poor predictor of the need for skilled care. [Deconditioning, which is more important] has more to do with the length of hospital stay and the preexisting level of function and fitness than it does with the diagnosis." "You really need to look at the services that patients need rather than at their diagnoses to know whether or not they need to go to a SNF," typified a similar position on the issue. Another concern was whether secondary diagnoses like mild dementia, which might well make the difference between SNF care and home care, would reliably appear in claims data.

In contrast, the optimistic experts pointed out that advanced age is a powerful marker of frailty and lack of compensatory physiologic reserve. "If you take the average 85-year-old, give them a serious acute illness, and put them in bed for several days, they will become debilitated, even if they were pretty good to begin with," commented one expert. Another concurred, saying, "Being 85 and admitted to the hospital is enough risk—you don't need a lot of additional qualifiers."

The optimistic experts proposed additional variables that are proxies of function and social support, and that might be captured in claims data. A secondary diagnosis of Alzheimer's dementia, for example, is an obvious marker of functional and cognitive impairment.[8] Some experts suggested a secondary diagnosis of Parkinson's disease as an indicator for mobility problems. A pattern of frequent, repeated emergency room visits or hospitalizations prior to the index stay suggests poor social support; poor overall health; severe, unstable illness; or all three problems. As for events occurring during the hospital stay, two experts noted that both a prolonged hospital LOS and any ICU stay lasting at least two days are strong markers for deconditioning (because prolonged bed rest has direct deleterious effects on the elderly, and because these events are associated with more severe illness). Major strokes, hip fractures, and lower-extremity amputations, although purely diagnostic designations, clearly lead to functional impairment. Major bowel or genitourinary surgeries often lead to nutritional and fluid imbalances. Serious postoperative complications, such as stroke or infection, take their toll on elderly patients. The development of an advanced pressure ulcer indicates immobility and poor nutrition. Similarly, the placement of a feeding tube indicates severe debilitation or severe dysphagia. Table IV.3 lists all the variables the experts suggested, organized by whether admission was pre- or post-hospital. For each variable, we note our level of confidence that it can be measured in Medicare claims and enrollment data.

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[7] Patient and family preferences are also missing from claims data, but, not surprisingly, neither group felt there was any hope of capturing this information through any claims variables.

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[8] Recent work has shown that, although claims data are not highly sensitive for Alzheimer's dementia, they probably are reasonably specific, and that people whose claims contain the Alzheimer's diagnosis code are clearly more impaired than those without it (Newcomer et al. 1999).

TABLE IV.3

SPECIFIC PATIENT-LEVEL FACTORS CITED BY SUPPORTIVE EXPERTS AS POSSIBLY INDICATING NEEDED SNF ADMISSION

	Availability in Medicare Administrative Data				
	Yes	Uncertain/ Possible	Possibly Could Be Proxied	Doubtful or No	Comments
Factor					
Factors Present Before the Index Hospitalization					
Age					
Advanced age[a]	x				Enrollment data
Baseline Burden of Comorbid Conditions and Diagnoses					
Dementia	x				See Note 1
Diabetes mellitus	x				"
Congestive heart failure	x				"
Stroke	x				"
End-stage renal disease	x				"
Severe venous insufficiency				x	"
Chronic obstructive pulmonary disease	x				"
Depression	x				"
Coronary artery disease	x				"
Recent Use of Health Care Services					
Numerous recent hospitalizations	x				From Part A claims. May also be an indirect indicator of social support.
Numerous recent emergency room visits	x				From Part A claims. May also be an indirect indicator of social support.
Baseline Functional Status					
Impairment in ambulation			x		See Note 2

TABLE IV.3 *(continued)*

	Availability in Medicare Administrative Data				
	Yes	Uncertain/ Possible	Possibly Could Be Proxied	Doubtful or No	Comments
Factor					
Layout of Home					
Presence of stairs inside home				x	
Apartment higher than first floor without elevator				x	
Doors in home too narrow for walker				x	
Presence and Competence of Caregivers; Adequacy of Social Support					
Isolated living situation				x	
Caregiver frail or in poor health				x	
Inability to afford private care				x	
Factors Related to the Acute Illness and Hospitalization					
Principal Diagnosis or Procedure					
Hip fracture	x				From hospital claim
Total joint replacement	x				"
Lumbar spinal stenosis surgery	x				"
Lower extremity amputation	x				"
Major bowel or genitourinary surgery	x				"
Abdominal aortic aneurysm repair	x				"
Thoracic aortic aneurysm repair	x				"
Stroke	x				"
Pneumonia	x				"
Congestive heart failure	x				"
Ischemic bowel	x				"
Coma		x			

TABLE IV.3 *(continued)*

	Availability in Medicare Administrative Data				
	Yes	Uncertain/ Possible	Possibly Could Be Proxied	Doubtful or No	Comments
Factor					
Events During the Acute Hospital Stay					
Significant electrolyte imbalance		x	x		See Note 3. Diagnoses associated with electrolyte imbalances on hospital or physician (nephrologist or internist) claims.
Nutritional problems		x	x		See Note 3. Diagnoses or surgical procedures associated with nutritional problems on hospital claim, or revenue center codes for nutritionist services on hospital claim.
Wound infections		x	x		See Note 3. Diagnoses or surgical procedures indicating infected wounds on hospital or physician (surgeon or infectious disease specialist) claims.
New debilitation or deconditioning at end of hospital stay		x	x		See Note 3. Prolonged ICU stay by revenue center codes on hospital claim,[b] or appropriate diagnoses on physician (physiatrist) claims.
New impairment in several ADLs or IADLs		x	x		See Note 3. Diagnoses associated with ADL impairment on hospital claim (such as amputation, hip fracture, or stroke); prolonged ICU stay by revenue center codes on hospital claim.[b]
New mobility problems, falling, and inability to transfer				x	
New hemiplegia or hemiparesis		x	x		See Note 3. Appropriate diagnoses on hospital or physician (neurologist) claims.
New dysphagia		x			See Note 3. Speech pathology and swallowing services by revenue center codes on hospital claim, or appropriate procedure codes (interpretation of radiographic swallowing tests) in physician (radiologist) claims.
New delirium		x			See Note 3. Appropriate diagnoses on hospital or physician (psychiatrists, geriatricians, or internists) claims
New depression		x			See Note 3. Appropriate diagnoses on hospital or physician (psychiatrist) claims.
New significant pressure ulcer		x			See Note 3. Appropriate diagnoses or procedure codes on hospital or physician (plastic or general surgeon) claims. (Unclear if hospital enterostomal nurse services are recorded in revenue center codes on hospital claims.)
Postoperative stroke		x			See Note 3. Appropriate diagnoses on hospital or physician (neurologist) claims.

TABLE IV.3 *(continued)*

	Availability in Medicare Administrative Data				
	Yes	Uncertain/ Possible	Possibly Could Be Proxied	Doubtful or No	Comments
Factor					
Postoperative infection		x			See Note 3. Diagnoses or procedure codes associated with postoperative infection (for example, ruptured appendix, peritonitis, pneumonia) on hospital or physician (surgeon, infectious disease specialist, pulmonologist) claims.
Intensive care unit stay ≥ specified period of time [a]	x				See Note 3. From revenue center codes on hospital claim.[b]
Ongoing Medical Treatment or Monitoring Needs in the Postacute Period					
Intravenous medications			x		See Note 3. Diagnoses known to require prolonged IV therapy on hospital claim, for example, osteomyelitis.
Parenteral nutrition		x			See Note 3. Unclear if enough information is available in claims data to identify these patients.
New catheter			x		See Note 3. Appropriate procedure codes (for example, insertion of nephrostomy tube or biliary drain) in hospital or physician claims.
Bladder retraining				x	
Tube feeding			x		See Note 3. Appropriate procedure codes (for feeding tube placement) on hospital or physician (gastroenterologist or surgeon) claims.
Frequent dressing changes and complex wound care			x		See Note 3. Diagnoses or procedure codes associated with complex wounds (for example, skin graft, or muscle flap) on hospital or physician (surgeon) claims.
Oxygen therapy				x	
Unstable vital signs with need for frequent monitoring			x		See Note 3. Appropriate diagnoses/procedures on hospital or physician claims.
Frequent weights and monitoring of fluid status			x		See Note 3. Appropriate diagnoses/procedures on hospital or physician claims.
Cancer with ongoing chemotherapy or radiation therapy		x			See Note 3. Appropriate diagnoses/procedures (malignancies treated with radiation) on hospital or physician (oncologist, surgeon, radiation oncologist) claims. Unclear if radiation oncology services are recorded in revenue center codes on hospital claims. Possibly outpatient claims from radiation treatment centers or radiation oncologists.

TABLE IV.3 *(continued)*

	Availability in Medicare Administrative Data				
	Yes	Uncertain/ Possible	Possibly Could Be Proxied	Doubtful or No	Comments
Factor					
Frequent laboratory tests			x		See Note 3. Appropriate diagnoses/procedures on hospital or physician claims.
Multiple medications				x	
Diabetes requiring frequent checks of blood sugar			x		Possibly history of frequent prior hospitalizations for uncontrolled diabetes or hypoglycemic episodes.
Chronic mechanical ventilation			x		Appropriate diagnoses or procedure codes from hospital or physician claims.

SOURCE: Expert interviews.

NOTE: Unless otherwise noted, "hospital claim" refers to claim submitted by hospital for the index hospitalization, and "physician claim" refers to claims submitted by physicians for care in the hospital (continuing care, consultation, procedures). (Welch et al. 1994; and Miller et al. 1997).

1. Should be identifiable by searching back through Part A and B claims for some defined period of time prior to the index hospitalization for occurrences of the appropriate diagnoses. For examples of using Medicare claims data to identify patient with particular preexisting diagnoses or comorbidities, see Newcomer et al. 1999 (dementia), and Lawthers et al. 1993 (diabetes, hypertension, ischemic heart disease, congestive heart failure, chronic obstructive pulmonary disease, and osteoarthritis).

2. Potentially could be proxied by searching back through Part A and B claims for some defined period prior to the index hospitalization for occurrences of diagnoses prespecified by clinicians as causing impairment in ambulation, such as amputation or hip fracture.

3. Potentially identifiable from appropriate diagnoses or procedure codes, specified by clinicians, on hospital and physician claims, and by revenue center codes for therapy services or ICU stays (Mitchell 1992).

[a] One expert suggested 75 or older, another 85 or older.

[b] Two experts identified prolonged ICU or CCU stays as good proxies for severe illness and significant functional decline. One suggested defining "prolonged" as 10 days or more, while another suggested only 48 hours or more.

Table IV.3 lists only isolated variables, and it is unclear whether, or how, to combine them (hence the arrangement of the factors in Table IV.3 in parallel columns, without any rows). Furthermore, it is unclear whether, or how, any of them should be weighted. For example, a number of experts cited comorbid diagnoses as important factors, but a comorbid diagnosis of diabetes alone, for example, is not indicative of the need for SNF care. Diabetes would probably have to be combined in some as yet undetermined fashion with other factors, such as age, principal diagnosis, and other comorbidities. Conversely, a complex postacute treatment need that is essentially impossible to deliver at home could, by itself, dictate the need for SNF care. Thus, a patient with no other factors (that is, no underlying chronic conditions, functional impairments, or shortage of social support) could ultimately require SNF care simply by virtue of requiring such a course of complex IV therapy (which, again, we would have to define somehow using claims variables).

Several experts attempted to identify several more-specific combinations of factors, which we list in Table IV.4. One expert said encouragingly, "I think you could come up with a number of these clinical scenarios that most clinicians would nod their heads to." Many of the combinations appear quite similar, differing in only one or two factors or in minor details. We consider this similarity to be a positive sign of consensus among experts. We also believe that most, if not all, of these profiles, with some additional specifications, could be readily implemented in claims data. We note, however, that the profiles do not incorporate many of the potentially useful variables listed in Table IV.3. If MedPAC were to decide to pursue development of clinically based indicators, much additional work would be necessary to refine the variables and combine them into sensible patient profiles.

One expert, a SNF admission coordinator, specifically mentioned a group of patients whom she sees frequently and believes "need" SNF admission. (No other experts mentioned this group,

TABLE IV.4

EXPERTS' SUGGESTIONS ON COMBINATIONS OF PATIENT-LEVEL FACTORS ("PATIENT PROFILES")

Baseline Characteristics and Preexisting Conditions	**Diagnoses or Features of the Acute Illness**
Age ≥75-85[a] +/- female[a]	Stroke[b]
Older spouse[c]	Stroke
Age ≥75-85 +/- female	Hip fracture[b]
Age ≥75-85 and dementia[d]	Hip fracture
Age ≥85	Major GI or GU surgery[b,e]
Age ≥75-85	Ischemic bowel[b]
Age ≥85	Surgery for abdominal or thoracic aortic aneurysm[b]
	CHF and any stay in an ICU or CCU[b]
Advanced age[a,e]	Prolonged stay in ICU or CCU[b,f]
Diabetes[d]	Diabetic leg or foot ulcer[b]
Dementia	5-6 Active medical problems[b,e] and acute illness[b,e]
Advanced age	Cancer,[b,e] and Pressure ulcer[b]
Age ≥85 and 3 or 4 active comorbidities[d,e]	Any major acute event,[b,e] or traumatic event/surgery[b,e]
Age ≥75-85 and diabetes and hypertension[d]	Hip fracture
Age ≥75-85 and diabetes and CAD [d] and cognitive impairment[d,g]	Hip fracture
Age >75, and Lack of caregivers (family or friends)[c]	Any of the following: Joint arthroplasty[b] Coronary bypass surgery[b] Major abdominal surgery[b,e] and +/- Prolonged hospital LOS[b,e]
End-stage renal disease[a,d]	Coronary artery bypass surgery
Age ≥75-85	Stage III or IV pressure ulcer[b]
CHF	Any of the following: Mobility problems[b,e] Falling[c] Cognitive change[b,e,h] Incontinence[c]
Parkinson's disease[d]	
	Any of the following: Hip fracture Stroke Deconditioning[b] Gait instability[b]

Table IV.4 (continued)

Baseline Characteristics and Preexisting Conditions	**Diagnoses or Features of the Acute Illness**
Age ≥75-85, and A number of comorbidities[d,e] and Repeated emergency room visits in the period prior to index hospitalization[d] and Repeated hospitalizations in the period prior to index hospitalization[d]	
	Cancer and Active chemotherapy[b,e] or Active radiation therapy[b,e]
Dementia	Any one of the following: Pneumonia[b] or Major bowel surgery[b,e] Electrolyte imbalance[b] Major pressure ulcer[b] Nutritional problems[b]
Age ≥75-85 and +/- multiple comorbid conditions[d,e]	Bilateral joint replacement[b] and Postoperative stroke[b] , or Postoperative infection[b]

SOURCE: Expert interviews.

NOTE: Unless otherwise indicated, each row of the table represents a combination or profile--all the conditions or characteristics in the first column *plus* all the diagnoses or features in the second column. +/- means some, but not all, experts included this characteristic.

[a] Can be identified in Medicare enrollment data.

[b] May be able to be identified using hospital claim from index hospitalization and/or physician claims for inpatient care (see Note 3, Table IV.3).

[c] Cannot be identified using claims data.

[d] May be able to be identified using claims data from period from some period prior to index hospitalization up to and including index hospitalization (see Note 2, Table IV.3).

[e] Would require a more specific definition.

[f] One expert defined prolonged as at least 10 days, another defined it as at least 48 hours.

[g] If "cognitive impairment" is taken to mean dementia.

[h] If "cognitive change " is taken to mean delirium.

however, so we are uncertain whether her experiences are anomalous.) The expert described a group of community-dwelling elderly people without acute illness, but with progressive dementia, whose increasingly disruptive behavior finally had imposed unbearable strain on their families.

To help the family, the primary care physician would hospitalize a patient in this group for an ostensible diagnosis of "acute" mental status change or to "rule out transient ischemic attack." Sometimes the patient's confusion had worsened as a result of a minor respiratory or urinary tract infection, which then became the pretext for admission, and which could be treated with IV antibiotics to justify the hospital's level of care. To qualify the patient for a Medicare SNF bed, the physician would keep the patient in the hospital for the required three days, and the patient usually would undergo a routine series of brain and cerebrovascular imaging studies and a psychiatric consultation. Often, the purpose of this "diagnostic work-up" was to help the family, who may have been reluctant to accept the diagnosis of dementia. The patient would then go to a SNF. Although the Part A SNF coverage would not last long, because skilled care was unnecessary, the family was given some time to pursue long term care options—and to obtain some relief from the stresses of caring for the patient.

The expert viewed SNF care as "necessary" for the patients in the sense that the current health care system offers no other options for families facing this type of crisis. She speculated that patients could be located by searching the claims data for hospital admissions with principal diagnoses of "rule out TIA," "acute change in mental status," "bronchitis," or "urinary tract infection," and with a subsequent battery of typical tests (computer-assisted tomography scan and carotid ultrasound studies), a psychiatric consultation for a diagnosis of dementia, and a three-day hospital LOS.

Although most of the preceding discussion has focused on identifying patients for whom SNF care is necessary on the basis of their characteristics, we also asked the experts to consider what adverse outcomes these patients might suffer if they did not in fact receive their needed SNF admission and were discharged home instead. Several experts felt that such people would be at increased risk for emergency room visits and hospitalizations for falls, dehydration, and pressure ulcers. A few of these experts also speculated that such patients might also overburden home health agencies and wondered if Outcome and Assessment Information Set (OASIS) data could be somehow used to look for functional decline. Such an analysis, which would require linking the Medicare claims data with OASIS data, may be worth additional investigation, but we were unable to pursue the idea further within the time constraints and scope of this study.

C. NECESSARY CARE FOR PATIENTS IN SNFs

The experts also had varying opinions on the two issues of (1) the concept of a minimum standard of necessary care for patients in SNF care, and (2) measuring such a standard using administrative data. Of the 27 respondents, 10 were uncertain or did not express clear viewpoints on either issue, and 2 bypassed the subject entirely by asserting that all patients admitted to SNFs receive all the care they need. Two experts disagreed with the concept of minimum necessary care. One of the two agreed in theory with the concept of a minimum standard but had little concrete to say about how to measure it in administrative data. The remaining 12 experts showed their support of the concept of minimum necessary care and of using administrative data by providing useful advice on potential types of clinical indicators and the administrative datasets from which they might be constructed.

1. Indicators Based on Processes of Care

The recommendations of the 12 supportive experts can be divided into ideas for indicators based on the *process of care* and those based on *adverse patient outcomes of care.* The following set of process indicators, proposed by a geriatrician expert in nursing home care, was quite specific:

- All patients should receive visits at least weekly by a physician, nurse practitioner, or physician's assistant.
- Patients with a principal or active diagnosis of CHF should have weekly or biweekly blood tests for electrolyte levels and renal function.
- Patients with active diagnoses of depression or dementia with behavioral problems should have an initial psychiatric evaluation.
- Patients with diagnoses of dehydration, weight loss, or malnutrition should have a nutrition evaluation.
- Patients with dysphagia should have a swallowing evaluation performed by a speech therapist or speech-language pathologist.

We believe it may be possible to translate most of these indicators into claims data. For the first one, physician visits could be identified through physician claims (we would need to ascertain how nurse practitioner and physician's assistant visits are billed). Construction of the second indicator would rely on a hospital discharge diagnosis of CHF and SNF revenue center laboratory codes for the appropriate tests. The third indicator could be constructed by first identifying patients receiving psychiatric consultation for depression or dementia with agitation while hospital inpatients (through Part B physician claims), and then verifying that they received a psychiatric evaluation in the SNF, again through a Part B claim. We are unsure whether the fourth indicator is feasible. It would require clinician input to identify the hospital diagnoses (if any) that indicate dehydration or malnutrition, and investigation to determine whether nutrition consultation appears in the SNF revenue center codes. Finally, the construction of the fifth indicator would be similar to that of the third indicator: identify those who received a speech-language or swallowing evaluation in the hospital (through hospital revenue center codes for therapy or radiology and/or a radiologist physician claim) and verify a speech-language therapy evaluation in the SNF (through a SNF revenue center code).

In contrast to this highly specific set of indicators, the remaining suggestions for process indicators were much more nonspecific, perhaps to the point where they could not distinguish inadequate care. They included recommendations, for example, that all patients admitted to a SNF receive a comprehensive assessment, including physical therapy, occupational therapy, and mental health assessments, and that patients then receive ongoing physical therapy, occupational therapy, and appropriate mental health services. Other suggested guidelines were that evaluation for and prescription of occupational therapy be performed only by occupational therapists; that patients with stroke, hip fracture, or hip replacement receive rehabilitation therapy; that physical and occupational therapy be delivered or supervised by trained therapists; and that patients be guaranteed such rights as minimum staffing levels and family access.

The experts were opposed to establishing any minimum durations or frequencies of therapy. They noted that the appropriate goals of therapy vary too widely from one patient to the next to allow formulation of any such guidelines.[9] Patient characteristics, such as baseline functional status; personality; current cognitive status, emotional state, motivation, and functional impairment; and medical and rehabilitative prognosis all enter into therapists' and patients' decision-making processes. One expert asked, "How aggressive with therapy do the patient and family want to be? Do they want to rehabilitate, or remediate and compensate, or palliate for end-of-life care?" Furthermore, patients in SNFs can, and often do, refuse to attend some therapy sessions or refuse to stay for entire sessions (although patients who refuse too often risk failing to qualify for continuing Part A coverage).

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[9] Some experts mentioned the guidelines that have been published by the American Occupational Therapy Association and the American Physical Therapy Association but did not elaborate on how these guidelines might be helpful. See Chapter III for a discussion of how published guidelines relate to the project's goals.

2. Adverse Outcomes of Care

The supportive experts conceded that certain adverse patient outcomes might indicate SNF care below a necessary minimum level—but only with a number of caveats and adjustments. The outcomes included such events as falls, development of pressure ulcers, weight loss, dehydration, failure to make functional improvements, emergency room visits, and hospitalizations. One expert, an orthopedic surgeon, suggested that postoperative hip dislocations for patients who have had hip replacement might indicate improper therapy or patient education by the SNF. He listed a number of specific procedure codes for reduction of dislocated hip to look for in physician claims to identify such outcomes.

The experts were concerned primarily that potential users of these indicators might overlook factors other than poor SNF care as causes of adverse outcomes. One such factor, of course, is the natural vulnerability of many SNF patients, who are usually elderly, ill, and frail. These patients will therefore experience a certain unavoidable rate of adverse events, even with the best care. Consequently, comparisons of groups of SNF patients, whether between different points in time or between different facilities, should take into account any underlying between-group differences in severity of illness. Another factor is care preceding SNF entry, over which SNFs have no control. Adverse events occurring in the SNF may be the result of poor hospital care or premature hospital discharge. Some experts suggested restricting adverse-event indicators to certain time frames or diagnoses to improve specificity. Fecal impaction occurring within the first five days of a SNF stay, for example, would be highly unlikely to result from care in the

SNF. In contrast, emergency room visits or hospitalizations for falls or hip dislocations in hip replacement patients might more likely be related to SNF care.

Most of the adverse outcomes would come from the MDS data, but several experts were critical of the MDS instrument. A number observed that the MDS was designed primarily for long-term care and thus was not always suitable for monitoring quality and outcomes in the postacute setting. One expert contended that very little information would be available to compare the intensity or mix of services over time or across regions or facilities, because all the MDS therapy variables are binary.[10] Another felt the MDS did a poor job of capturing diagnostic or purely medical information. Yet another expert had actually performed psychometric validity studies of the MDS Mood and Behavior section and found it to be inaccurate for measuring depression. Finally, a number of the experts pointed out that the MDS does not provide a good picture of a patient's true baseline function, and that even the initial five-day instrument asks only about occurrences going back 7 to 14 days, which often extend back only into the hospital stay.

In Table IV.5 we list the outcome measures the experts suggested. Some outcomes, such as the number of lawsuits or ability to perform a timed walk over a set distance, cannot be measured in administrative data. However, many do appear feasible, and we also list preliminary thoughts on potential approaches.

D. INTERVIEWEES' COMMENTS ABOUT SNF PPS AND THE SNF INDUSTRY

As described in Section A of this chapter, we invited the experts to comment on the current situation in Medicare SNF care, including the effects of PPS and other external forces. We

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[10] The MDS actually does record the number of minutes of therapy provided.

TABLE IV.5

ADVERSE EVENTS CITED BY THE EXPERTS AS POSSIBLY INDICATING INADEQUATE SNF CARE

- Lack of Improvement or Progression in Function
  - Repeatedly being judged as requiring maximal assistance in ADLs
  - Patients initially rated as having good rehabilitation potential then later failing to meet that criterion
  - No improvement in functional limitations in ROM
  - For hip surgery patients: failure to progress in mobility for hips
  - For hip surgery patients: decreased ROM
  - For hip surgery patients: formerly able to walk about the home, now bedridden
  - For hip surgery patients: reduced ability to walk a set distance in a given time
  - For stroke patients: failure to progress in ADLs or communication
  - No improvement in pain if no other obvious reason for pain (such as a recent fall)
  - Development of depression and withdrawal
  - Patients who had been continent prior to illness then became incontinent, not regaining continence[a]
  - Patients becoming incontinent since the last assessment
  - Unable to return home (especially if had been living at home prior to illness)[a]

- Falls
  - Emergency room visits for falling with injury[b]
  - Hospitalization for fall-related injury[b]

- Weight Loss

- Dehydration

- Fecal Impaction

- Development of Pressure Ulcers (Especially in Immobile Patients)
  - Stage IV pressure ulcers[d]
  - Failure of pressure ulcers to heal

- Emergency Room Visits and Hospitalizations
  - Patient is in poor condition on return to the acute care setting[a]
  - Hospitalizations[b]
  - For hip surgery patients: readmission for dislocation of hip (indicates improper positioning of legs by therapists and nurses and incorrect or poor physical therapy)[b,c]

- Patient/Family Response to Care[a]
  - Hospital lawsuits per case

- Death[b]

- Delirium

- Fever

- Consequences of Prolonged and Inappropriate Bedrest
  - Urinary tract infection[d]
  - Atelectasis or pneumonia[d]

SOURCE: Expert interviews.

NOTE: Unless otherwise noted, all outcomes listed are potentially measurable in MDS data.

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[a]Probably cannot be measured in administrative data.

[b]Potentially measurable in claims/EDB data (claims includes both Part A and physician Part B).

[c]Identifiable through hospital claim plus surgeon's claims with specific CPT codes.

[d]Potentially measurable in both MDS and (if severe) claims data (claims include both hospital and physician Part B).

ADL = activity of daily living; CPT = Current Procedural Terminology; EDB = (Medicare) Enrollment Database; MDS = Minimum Data Set; ROM = range of motion; SNF = skilled nursing facility.

acknowledge that many of the remarks constitute unsubstantiated anecdotes and opinion. Moreover, some remarks do not relate directly to the specific project goals of developing access indicators in administrative data. Some experts may have related atypical experiences or idiosyncratic reactions, and some may have misunderstood Medicare reimbursement regulations or mistakenly attributed to SNF PPS trends that are in fact unrelated to it. Nevertheless, the perceptions of a group of experienced, active SNF experts may provide useful insights. We divide the experts' observations into those about the hospital-SNF interface and those about the care of patients in SNFs.

1. Observations About the Hospital-SNF Interface

a. Patient Stability

Some respondents observed that the eagerness of hospitals to discharge patients quickly sometimes placed SNFs in a difficult position. In some cases, patients might not have had the three-night hospital stay required to qualify for Medicare SNF coverage. One respondent described having to ask hospitals to keep some patients one more night: "The person falls and breaks their hip Monday morning, they operate Monday afternoon, and they call you Wednesday morning and say the patient's ready to come over! You have to play the three-day stay!"

Some respondents also felt that SNFs had to be alert to the possibility that hospitals might discharge unstable patients. According to one, "Hospitals can shade the truth." Another commented, "[The hospital] social workers don't always tell you everything." As a result, SNF admission coordinators used their hospital screening visits in part simply to verify patients' basic medical stability. "If there are complications [after we accept them], we bite the bullet." Some facilities felt pressure from hospital discharge planners to accept at least some unstable patients, because too many refusals could lead to a loss of referrals.

A few respondents commented that the new transfer Diagnosis-Related Group (DRG) rule seemed to have little effect on the eagerness of hospitals to discharge patients. This rule, part of the BBA, applies to the 10 DRGs most commonly associated with postacute care and reduces a hospital's payment for a patient discharged sooner than the average LOS for that patient's DRG. The purpose of the rule was to correct Medicare's paying hospitals full DRG payments for abbreviated courses of treatment, and then paying another provider for postacute care that should properly have been part of the hospital treatment.

The experts observed that unstable patients take up a lot of SNF staff's time. For example, nursing staff must devote special attention to detecting clinical worsening, and unstable patients sometimes need to have IV antibiotics or IV fluids started in the SNF. Often, the patients must return to the hospital despite these additional efforts. Even stable patients sometimes develop problems in the SNF because of hospitals' short-sighted approaches. As one respondent commented, "The hospitals tend to be too focused on the condition; for example, they're really focused on the hip fracture but they don't notice the patient hasn't had a bowel movement for five days."

b. Patients' Financial Attractiveness to SNFs and Access to SNF Care, Under PPS

We asked the respondents to describe patients who have become financially unattractive to SNFs since PPS and thus might face barriers to SNF admission. First, as others have done (Liu et al. 2000; and U.S. General Accounting Office 1999), nearly all the respondents cited patients with high nontherapy ancillary costs; in other words, those needing special beds; orthotics; mechanical ventilation; transportation for transfusions, chemotherapy, or dialysis; medications;

or IV therapies.[11] One respondent, for example, had recently refused a patient who was taking a pill that cost $160 per day (not including her other medications). Respondents also reported asking physicians to change IV antibiotics to oral ones before discharge from the hospital, or confirming that patients really needed the last few days of IV antibiotics scheduled for the SNF. Diagnoses mentioned by experts as associated with high nontherapy ancillary costs included having numerous comorbidities (because of the association with multiple medications) and renal failure on dialysis, osteomyelitis, endocarditis, HIV, or resistant enterococcal or staphylococcal infections.[12,13] Several also noted, however, that medically complex patients would be more attractive after their Medicare payment rate increases during the next several months, as required by the Balanced Budget Refinement Act (BBRA).[14]

The experts identified other characteristics that influence patient attractiveness. Patients with behavior problems were undesirable, because they required substantial staff time to control their tendencies to wander and "slug or hit." Also unattractive were demented patients with low-skilled needs, especially nursing, if they were likely eventually to require long-term care and their families did not have financial resources to pay for private beds. Medicare might pay for five days of SNF care after the patients' hospital discharge, but care after that would be uncovered. In this situation, a SNF might view an elderly demented patient (therefore with a short life expectancy and probably less aggressive treatment needs) more favorably than a younger demented patient in reasonably good physical health.

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[11] One expert also believed that "individual facilities are discriminating against individual patients depending on their '95 cost reports and where they are in the phase-in." This comment refers to how facilities are paid during the three-year transition period from the old cost-reimbursement system to full prospective payment. The phenomenon, if true, would represent only a temporary effect until the phase-in period is over.

[12] Diagnosis does not always predict medication costs well, however, as one expert citing the case of cancer pointed out. Some of the newer chemotherapeutic agents are enormously expensive, whereas some of the older but still commonly used agents are quite inexpensive.

[13] One of the experts proposed identifying beneficiaries discharged with the diagnoses listed above and examining their SNF admission rates and length of stay before and after SNF PPS as a means of investigation the effects of SNF PPS. She meant such a study to apply specifically to the original SNF PPS, not to any future SNF policy changes, since it is only under PPS that patients with these diagnoses might appear unattractive. There is no other clinical basis to this set of diagnoses.

[14] The BBRA will temporarily increase payments for several high nontherapy ancillary RUGs by 20 percent for up to six months.

Most respondents acknowledged that facilities unavoidably had to weigh financial considerations in acceptance decisions. For example, given a choice of two patients, one of whom clearly was more expensive to care for, a SNF naturally would take the less expensive one. Because facilities theoretically are not supposed to base admission decisions on financial factors, respondents noted that SNFs developed other excuses to turn down patients. Facilities with high occupancy rates considered themselves fortunate in this regard because they could say they did not have a bed for a patient of a particular gender—a statement that often or very shortly would be true. Another commonly cited reason was having insufficient staff at the time to take on a particular patient.

In contrast to what other experts said, one respondent claimed that PPS had not caused facilities to appraise each patient's financial attractiveness; rather, PPS may have reduced access for all patients by globally lowering bed availability. For reasons related primarily to the tight job market and not to SNF PPS, the market for skilled nurses is currently highly competitive, which makes it difficult for SNFs to hire and retain staff. If payment is too low, this expert maintains, facilities will cut back on admissions, because their staffs cannot properly cover the patient population. Rather than stint on care, facilities simply will not admit residents if their staffing is too tight.

The respondents mentioned competing incentives that would help counterbalance the tendency of SNFs to avoid all unattractive patients. First, as mentioned, too many refusals of hospital referrals could result in a loss of referrals for a SNF. Second, medically complex patients could raise a facility's *Medicaid* casemix, which might be advantageous for the facility in the long run. Third, as one expert put it, "An empty bed may be losing you $160 a day, so even if you lose $50 a day on a PPS patient, that's still better." Another expert called this the "heads in beds issue." Fourth, SNFs may have organizational relationships that oblige them to accept certain patients. Two of the respondents were from nonprofit SNFs affiliated with assisted-living facilities that always accepted residents from these facilities as "their" patients. Finally, one respondent from an area with high managed care penetration commented, "The nursing homes have been beaten down so badly [by managed care organizations] that Medicare fee-for-service patients actually look financially attractive."

In the end, although respondents acknowledged the financial incentives in PPS, their overall experience was of no marked decrease in access for any major subgroup of patients. One expert felt that hospital LOS may have increased initially for some patients right after PPS, but that it had now returned to baseline. Another believed LOS may have increased slightly. One noted that hospital discharge planners might have to make several telephone calls to place more complex patients, whereas before PPS, they had to make only one. As we mentioned before, some of the experts felt that increased LOS might not necessarily be a good thing. All agreed that the increased reimbursement levels from the BBRA will at least temporarily help correct the problems of the current PPS rates.

2. PPS and Care for Patients Admitted to SNFs

The interviewees had much to say about the effects of PPS, MDS, and other recent developments on care in SNFs. A small minority made noncommittal generalizations that SNF patients always receive the care they need, that nurses and therapists have unlimited discretion in treatment decisions and do not consider financial issues, and that facilities do not stint on care but simply will not admit residents if staffing is too tight. The rest spoke of various recent changes, both positive and negative, they had observed.

a. Changes in Staffing and Equipment

Several respondents described the ways that SNFs had changed staffing strategies in response to PPS. Some facilities had stopped using contracted staff or employing full-time staff to provide such services as respiratory therapy or IV therapy, because contracted staff were too expensive and full-time staff were insufficiently busy to justify their positions. For example, one expert had heard of layoffs of wound care nurses after PPS. Instead, the SNFs trained their nurses to provide the services. In general, this training had proceeded smoothly and the nurses were doing a satisfactory job. Therapy staffing also had changed, with many SNFs switching from using expensive contracted therapists to hiring their own staff therapists. One facility found that having its own in-house therapist led to the additional advantages of increasing its therapy minutes and casemix and of improving performance on MDS quality indicators. However, one respondent was concerned that, to save money under PPS, some SNFs might rely too much on assistants or aides to deliver therapy. Substitution of lower-level staff could create serious quality problems, the respondent explained, because assistants, although trained to deliver therapy, are not qualified to evaluate patients' progress or modify treatment regimens.

According to another respondent, the widespread elimination of full-time respiratory therapists by the SNFs in his state after implementation of PPS may have increased hospital LOS for certain diagnoses. Nearly all the SNFs in his state now required that patients' respiratory status be more stable at the time of hospital discharge than they had before PPS. As a consequence, hospital LOS for certain diagnoses, such as CHF, seemed to have increased in the past few years. This lengthening of hospital stay might be appropriate, if hospitals had been discharging unstable patients *too* quickly prior to PPS, or might be *in*appropriate, if it indicated that medically stable patients ready for hospital discharge were unable to gain access to SNF beds.

Interviewees reported that PPS also had led SNFs to alter procedures for acquiring equipment. Prior to PPS, many SNFs had often rented even commonly used equipment, such as oxygen concentrators. Now, however, purchasing equipment was generally the rational decision. Despite the lack of direct reimbursement for equipment under PPS, the experts felt that it was *more* important to aggressively provide patients with key equipment than it had been under cost-reimbursement. In their view, early provision of such devices as pressure-reducing boots for the heels, special beds, and alarm systems to signal falls or wandering could prevent future expensive complications and were well worth their cost. However, the experts also noted that many facilities that did not share this philosophy had reduced their provision of such equipment. Similarly, although the experts themselves believed more expensive wound or ostomy products might be cost-effective in the long run (because they require less frequent changes), they also believed some facilities were purchasing less expensive products.

b. Changes in Practice

Opinions on the effects of PPS on practice within SNFs ranged from generally positive to extremely negative. Those with a more positive view felt that PPS had not led SNFs to change the amounts of therapy provided; rather, it had caused them to shift the timing and intensity of therapy. It has now become much more important to conduct the initial therapy evaluation as soon as possible after admission, and to conduct ongoing evaluations to determine whether a patient was improving, and whether continued therapy could be justified. As one respondent noted, “PPS has forced us to do a better job with therapy. It’s really important to get that evaluation done right away, in a shorter time frame." Respondents holding this view also felt that PPS had given SNFs strong incentives to be more aggressive in anticipating problems and detecting incipient complications, and to be more efficient and goal-directed in providing therapy. One expert offered, as an example, her facility, which now actively screens for patients at high risk for pressure ulcers (such as hip fracture patients with poor oral intake) and immediately implements preventive measures.

The expert raised only one example of a complicated situation—that of a stroke patient receiving tube feeding, too weak to tolerate therapy on admission but later with enough strength to do so. In this case, after the five-day MDS has been completed, only occupational therapy and physical therapy are ordered. On day 10, however, the patient becomes more alert and wants to eat. Despite not receiving reimbursement for it from days 10 through 14, this respondent's facility would start speech and swallowing therapy ("*we'll* have to pay"). She commented that some facilities would be reluctant to begin this therapy.

Other respondents held more negative views about PPS. They noted a general decline in both the quantity and quality of services. One made broad allegations (without citing specific instances or data) that certain kinds of patients were being systematically shunned or, if accepted, often had to be rehospitalized because of poor care. This expert went on to say that the RUG-III payment system discouraged comprehensive assessment and care planning for patients with complex care needs, so that patients' comorbidities were consistently ignored. He believed he was seeing increases in medication errors. He also claimed that even straightforward orthopedic patients were receiving only "bare-bones" treatment. In addition, patients were not being given the kinds of rehabilitation therapy they needed, their courses being pursued less vigorously than they should have been. Patients no longer had access to adaptive equipment, which SNFs lacked the capital to purchase. Previously provided psychosocial support was "falling by the wayside," leading to increased depression and undetected dementia. The expert concluded that SNFs were not reimbursed for any of these seemingly "extra" but actually crucial services.

Two other interviewees echoed some of these themes, although perhaps not as vehemently. One stated simply (but without offering supporting evidence), "People have not been getting what they need to be getting." Another felt that the quality of care in SNFs has deteriorated during the past several years, although not necessarily because of PPS. This expert believed SNFs were increasingly lacking the resources to provide restorative care (that is, care designed to help patients recover function and return to the community).

A number of experts in rehabilitation therapy were highly critical of PPS's effects on therapy in SNFs. They alleged that facilities were strictly limiting therapists to the total number of therapy minutes recommended for each RUG-III group, supposedly even penalizing therapists for providing too many minutes. At the same time, they charged the RUG-III system with allotting inadequate amounts of therapy. In the past, patients might have received as much as one hour of therapy with *each* discipline per day. Under PPS, in contrast, even a patient in the "Very High Rehabilitation" RUG-III subcategory was now limited to 100 minutes per day across *all* disciplines, an amount the respondents labeled "pathetic." As a result of these restrictions, patients no longer were receiving enough "restorative" therapy to help them regain function. Instead, they were pushed too quickly toward "compensatory" goals designed to teach them to cope and compensate for fixed deficits.

These respondents complained that the fixed amount of therapy time often was apportioned across the therapy disciplines by accounting and administrative personnel in ways that met the financial needs of the facilities while often failing to meet the patients' needs. Thus, a therapy discipline might get short shrift even though additional minutes of that therapy might greatly benefit a patient. The poor allocation of a fixed amount of time unfortunately tended to pit therapists against each other, either by discipline (physical versus occupational versus speech), or by employment status (full-time versus contracted).

The experts most resented the effects of PPS on the therapists' feelings of professionalism. Among the therapists' key professional skills is to evaluate patients and select the frequency and duration of therapy. Under PPS, the experts charged, "company accountants" prescribe the goals, duration, and types of therapy by first instructing therapists to place patients into the highest-paying RUG-III groups, and then telling them how much of each type of therapy to provide, even if that allocation does not best meet a patient's needs.

The extent and severity of the concerns raised by the experts' anecdotes is unclear. As staff members of a large national organization, the experts had apparently heard of such situations from members. Another expert, a physician practicing in the acute hospital setting, had heard thirdhand hearsay evidence of similar stories from the therapy staff in his hospital, who related what they had heard from their SNF colleagues. In contrast, therapy staff at a local SNF that is part of a large for-profit chain described a collegial atmosphere in which all therapy disciplines met regularly to decide how best to treat each patient within the alloted time. Decisions were always made by clinicians. Although these staff had heard rumors that administrators in other SNFs allocated therapy minutes and that relationships between disciplines were adversarial, they had no firsthand knowledge of such facilities.

Finally, two interviewees raised the possibility that PPS might have interesting indirect effects. One suggested that the stresses of PPS might indirectly harm the quality of care provided for *long term care* residents, especially those with dementia. Many facilities have both skilled Medicare beds and nonskilled long term care beds, with the same staff covering both types of patients. Staffing shortages caused by PPS could lead to decreased availability of staff time for such activities as keeping long term care residents clean and groomed, helping the residences cut food at meals, spending time on therapeutic recreation to decrease boredom and wandering behavior, and counseling and comforting families.

The other respondent, familiar with both Veterans' Affairs (VA) and community SNFs, had noticed an increase in applications from community SNFs to transfer postacute patients with veterans' benefits to VA facilities. Most elderly veterans may receive care either through Medicare in community facilities or through VA in VA facilities. It seemed to this respondent that the community facilities now were much more interested in transferring certain patients with VA coverage to VA facilities. These patients tended to be the ones who had revealed themselves to be unexpectedly expensive, perhaps because of difficult-to-manage agitation or increasingly complex medications.

3. Other External Forces Not Directly Related to SNF PPS

Some experts discussed the regulatory, medicolegal, and media pressures on the SNF industry. According to these experts, the main regulatory forces with which SNFs must contend are the regional Medicare fiscal intermediaries and the state nursing home survey agencies. A few respondents complained that fiscal intermediaries' coverage decisions seemed "mysterious" and that their interpretation of coverage criteria varied substantially. Several interviewees also noted that "Medicare's watching you [for questionable claims]." The example of an elderly patient (especially one with Alzheimer's disease) in the ultra-high rehabilitation RUG-III group was mentioned repeatedly as one that would certainly attract the attention of the fiscal intermediaries. One respondent, at a nonprofit facility, opined that some SNFs had charged "outrageous amounts for therapy" prior to PPS, and that fiscal intermediary oversight now discouraged these facilities from "working the system" as they once had done.

With one exception, opinions on the annual state nursing home survey process generally were negative. The respondent with the positive outlook viewed the extreme strictness of her state's survey as helping to maintain high standards of care ("our state surveyors would not allow wounds to *not* heal!"). She believed the survey restrained facilities from recklessly changing the process of care or the numbers or training of staff. The other respondents were much less positive, depicting the current survey process as intimidating, punitive, adversarial, and completely antithetical to a true quality improvement effort. The SNFs' fear of being singled out by state surveyors for QI deficiencies has led them to focus all their efforts on the QIs (such as hydration, nutrition, pressure ulcers, and fecal impaction). As a result, important aspects of care that are not surveyed, such as the provision of psychosocial support or screening for depression and cognitive problems, are neglected. The survey process caused staff to spend all their time documenting, rather than providing, patient care.

One expert felt that increased public scrutiny of nursing homes may have improved some areas of care. Another, in contrast, was vehemently opposed to current trends. The first expert believed that rates of pressure ulcers and falls in facilities in his area may have improved in response to the large number of malpractice attorney advertisements and billboards. The second expert strongly disagreed, accusing the combined effects of the recent White House nursing home quality initiative, the recent Senate hearings, media sensationalism, the capricious state survey process, and attorney greed of leaving "the industry severely demoralized, raped, insulted, and abused." He charged that lurid accounts in the press were leading families to believe nursing home mistreatment of residents is widespread. He was appalled by the current environment and was not surprised that SNF staff turnover was "through the roof." He believed that the lowest-level front-line staff, who provide all the care—the certified nurse assistants and licensed vocational nurses—are defenseless scapegoats. This expert claimed that, in reality, there are "one hundred thousand acts of kindness [in nursing homes]" for every instance of so-called abuse.

4. Other Issues: Rural Versus Urban Location, Integrated Health Systems, and For-Profit Versus Nonprofit Status

Respondents commented and conjectured on how SNF rural or urban location, membership in a larger health system, and for-profit or nonprofit status might affect access to SNF care, the quality of SNF care, and SNFs' responses to PPS. One respondent speculated that increased distances might make home health care a less attractive postacute care option in rural areas, especially for patients requiring frequent visits or close monitoring. Two interviewees noted that rural home health agencies often have difficulty hiring, contracting with, and retaining therapists, so that they are able to provide only limited amounts of therapy. Because SNFs are thus the only way to access postacute therapy in rural areas, a larger proportion of postacute patients (relative to the proportion in urban areas), including patients who would otherwise have done well at home, might be discharged to SNFs.

Another respondent wondered whether a sense of obligation to accept members of local communities might outweigh any financial considerations for rural SNFs. Her SNF, although not rural, always accepted residents from its affiliated assisted-living facility/community.

One interviewee speculated that physicians covering rural SNFs might be more likely than physicians in nonrural areas to send patients to the emergency room. When a SNF telephones a covering physician to describe a patient with an acute problem, the physician must gauge whether the patient can be observed or managed safely in the SNF, or whether the condition is potentially serious enough to warrant transfer to the emergency room. It is possible to forgo some emergency room visits if a physician can obtain urgent laboratory and X-ray tests. Because these services are less readily available in rural areas, however, the physician may believe the only choice is to send patients to the hospital. Another key factor in the decision-making process is the physician's level of confidence that the SNF's staff has accurately conveyed the patient's condition and medical history over the telephone, and that the staff can be trusted to monitor the patient's condition and quickly detect and report deterioration. For example, a rural physician covering a large geographic area may not know the staff of a particular SNF well and might therefore feel more comfortable sending a patient to the emergency room.[15]

Respondents discussed behavioral differences between free-standing hospitals and SNFs on the one hand and integrated health systems that incorporate hospitals, SNFs, and home health agencies on the other. In theory, access to SNF beds in an integrated system should be easier, because the overall organization has an incentive to increase profits by moving patients to a lower-cost setting, such as its SNF, even if the SNF's cost exceeds its payment. The discharge destinations of hospitalized patients in integrated systems might thus provide an indirect comparison group against which to judge SNF access for patients in "nonintegrated" settings. One group of respondents with a policy background agreed, observing that studying where patients go in a large multifacility system would be of great interest.

However, this theory of integrated system behavior did not hold true for at least one integrated system. A SNF director who was the sole respondent actually to work in such a system commented that his board of directors seemed unable to understand how his SNF, despite its losses, enabled the system to enjoy an overall higher profit margin than it otherwise would, by allowing the hospital to discharge patients quickly. Rather, the board focused only on each facility's individual profit-and-loss statements and therefore wanted the SNF's losses to be turned around.

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[15] In many rural areas, the hospital *is* the SNF, because the hospital has "swing" beds that can be used as either acute care or SNF beds.

The interviewees were unable to shed much light on possible behavioral differences between for-profit and nonprofit SNFs. Respondents from the for-profit world had little to say about the issue, and respondents from *nonprofit* facilities said that, as *they* were anxious about patients with high non-therapy ancillary costs, for-profit facilities would only be more concerned. They went on to say, however, that for-profit SNFs might face stronger incentives to reduce losses from empty beds. One interviewee had sensed differences in the ease with which for-profits and nonprofits were adapting to the changes caused by PPS. She felt the larger for-profit chains had implemented some systems in anticipation of the changes, and that facility-level managers were receiving their "marching orders." To her, the nonprofits were overwhelmed and seemed to be floundering.

V. A CONCEPTUAL FRAMEWORK

"Access to health care" is difficult to define precisely and is, by common agreement, still more difficult to measure. A conceptual framework for the analysis of access is a means of clarifying the factors that lead some patients to be placed in one post-hospital environment while others are placed in a different one. The framework presented in this chapter differs markedly from those of Weissman and Epstein (1994) and Andersen (as presented in Miller and Weissert [2000]) in that it insists on the distinction between needed care, as determined by the condition of the patient and his or her home environment, and actual care received, as determined by hospital discharge planning, local availability, provider behavior, and family preferences for alternative postacute settings. Access, measured by the comparison of actual to needed care, can thus be either less than or, perhaps for some groups, greater than the clinically necessary level of care. A few basic principles underlie this framework:

It is important to consider access within properly defined subpopulations. Problems of access may well be masked if certain groups are combined. Consider, for example, a casemix system for prospective payment for SNF care that makes beneficiaries with diagnosis A more financially attractive than those with diagnosis B.[1] This may lead those with diagnosis A to be preferentially admitted to SNFs and so to "fill up" SNF beds that would otherwise be occupied by those with diagnosis B. If the clinical need for care by beneficiaries with diagnoses A and B combined is computed, it may well turn out to be equal, or nearly so, to the amount of care received by this group as an aggregate. An access problem for persons with diagnosis A may thus be obscured by the preferential admission to SNFs of persons with diagnosis B. We get an accurate picture only by treating the two groups separately.

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[1] Many in the nursing home industry allege that this situation is pervasive in the current Medicare casemix system for SNFs.

Necessary postacute services must be distinguished from the setting in which those services are rendered. The framework presented here maintains a distinction between appropriate postacute care—the necessary treatments, tests, therapy, and monitoring recommended for persons discharged from a hospital—and the setting in which that care is best provided. For many diagnoses, appropriate care is sketched in greater or lesser detail in clinical guidelines for postacute care. Such guidelines have been developed for cardiovascular disease, stroke, hip fracture, pneumonia, and other diagnoses common among the Medicare population. There are no guidelines, however, that indicate which postacute setting (home, rehabilitation facility, or SNF) is most appropriate for a given patient, according to the patient's clinical and functional characteristics and the challenges posed by his or her home environment. This does not mean, of course, that postacute settings are interchangeable, but rather that professional opinions and judgments about the proper setting for particular types of patients have never been codified.

Determinants of care actually received probably cannot be separately identified. A fully developed model of access would delineate the distinct forces determining the actual setting in which postacute care occurs. The framework presented here identifies four such forces: (1) discharge planning, (2) local supply, (3) provider behavior, (4) and beneficiary and family preferences. All these forces, however, are strongly interconnected and highly variable. Moreover, attribution of causality is nearly impossible to ascertain. Does readily available home health care in an area, as evidenced by heavy observed use of home care, *permit* patients to be discharged to home health care as opposed to a SNF? Or, conversely, do preferences of discharge planners for home as opposed to institutional care in the area produce high utilization of home care? No existing research answers this question. Consequently, the framework does not attempt to tease out individual influences on postacute placement.

A. DESCRIPTION OF THE FRAMEWORK

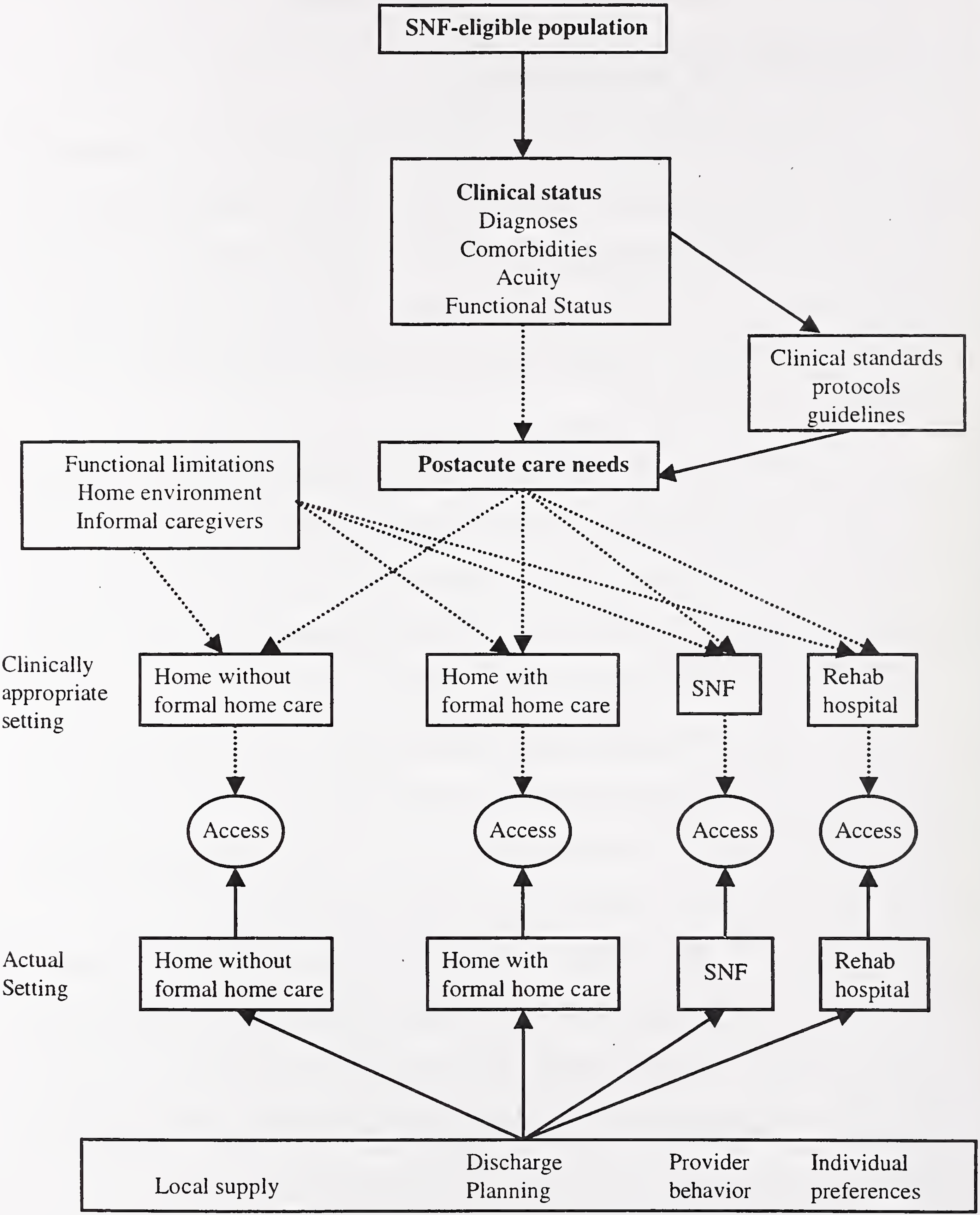
A framework for analysis of access to SNF and other post-hospital care is displayed in diagrammatic form in Figure V.1. As a conceptual, rather than an empirical, model of access, the framework naturally presents an absolute view of access, contrasting care that is considered clinically necessary with care that is actually received. The framework contrasts clinical need for care, as determined in the upper two-thirds of the figure, with actual provision of care, determined in the lower one-third.

The population at risk for a Medicare-covered SNF stay consists, as always, of those beneficiaries who have been discharged from a hospital stay of three days or more at some point within the previous 30 days, shown at the very top of Figure V.1. Each person in this group may be characterized in terms of clinical status: primary and secondary diagnoses, other comorbid conditions, the acuity of these conditions, frailty, prognosis, and functional status. The explicit comparison of clinical need with the observed provision of care is our conceptual measure of access, shown in the ovals bearing that name. A complete alignment of clinical need with care actually provided is considered indicative of perfect access to clinically needed care. Less-than-complete alignment, by contrast, indicates some limitation in access to care.

Each arrow in the figure denotes the number or proportion of beneficiaries with a given configuration of characteristics that move or ought properly to move from the source rectangle to the target rectangle. Solid arrows indicate proportions that are measurable with existing data. Dotted arrows indicate proportions that are not measurable or are only partially measurable at present.

FIGURE V.1

CONCEPTUAL FRAMEWORK FOR ACCESS TO POSTACUTE CARE



A patient's clinical status determines the need for a particular configuration of postacute care, including the expected duration of this care and the frequency and intensity of treatments and monitoring. Elements of this care may often be found in clinical guidelines, pathways, and protocols developed to indicate appropriate treatment for postacute care of patients suffering from cardiovascular disease, stroke, hip fracture, pneumonia, and other diagnoses common among elderly people. The arrows from clinical status through clinical standards to postacute care needs indicate this path from clinical conditions to necessary postacute care, via clinical guidelines.

Guidelines are necessarily general and incomplete, since medical decisions must reflect numerous factors that cannot reasonably be incorporated into written guidelines and often must be revised if the patient's condition improves or worsens. A patient's physician may modify or reject the recommendations in published guidelines to account for unique circumstances, the severity of the condition, the patient's ability to tolerate treatment, and the presence of coexisting conditions. For example, guidelines may specify that most patients recovering from stroke or hip fracture should receive physical or occupational therapy, but guidelines cannot identify which patients should or should not receive it, nor can they specify accurately how much therapy should be provided. The direct (dotted) path from Clinical Status to Postacute Care Needs in Figure V.1 indicates those care needs that are so contingent on individual circumstances that they cannot be captured through existing guidelines.

After the need for care is ascertained, the setting in which this care is best provided must be determined. We consider four possible settings: (1) home without formal home care, (2) home with formal home care, (3) SNF, and (4) rehabilitation hospital. Other destinations not considered here include discharge to a long term care hospital, a psychiatric facility, or a non-SNF nursing home. Long term care and psychiatric hospitals are infrequent discharge destinations, and non-SNF nursing home stays are not covered by Medicare. The appropriate location for postacute care is determined by the nature of that care, its complexity and frequency, and the requirements for close monitoring of the patient, as well as by other nonclinical factors, such as the cognitive and functional status of the patient, the nature of the home environment, and the availability and capability of caregivers in the home. Figure V.1 shows the separate influences of clinical and nonclinical factors. As mentioned before, dotted arrows indicate that there are no generally agreed-upon pathways from clinical and nonclinical factors to care settings. It is thus not possible to determine appropriate settings with existing data.

Discharge to home without home care is appropriate for persons who have limited postacute care needs, who are cognitively intact, who have either few functional limitations or very good informal support at home, and who have access to reliable transportation to physician offices or outpatient clinics.[2] Formal home care is typically best for patients who, because of the severity of their condition or functional limitations, are unable to leave their homes and who also have adequate informal support, usually provided by family members. So long as the patient's requirements for care are not so great as to require continuous monitoring, postacute care provided by home health nurses, aides, therapists, and medical social workers is often considered appropriate. Care in a SNF is typically indicated either when the patient's care needs are too intense to be provided in the home or when informal support from relatives or other caregivers is not considered adequate to maintain the person at home. Finally, care in a rehabilitation hospital is most suited to those patients who require and are able to tolerate sophisticated and intensive physical, occupational, and speech therapy.

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[2] We fully recognize that the term "home without formal home care" is not well defined. As an appropriate discharge destination, it must be assumed to encompass proper outpatient follow-up care.

Access to postacute care in general and to SNF care in particular is gauged by comparing the *appropriate* setting for care with the *actual* setting. The actual setting is determined through the interplay of numerous factors whose individual contributions are far too complex to describe precisely. Figure V.1 shows four influences of special importance. They are grouped together in a single box to emphasize the near-impossibility of disentangling their separate effects.

Hospital discharge planning should probably be considered the dominant force governing the setting in which postacute care occurs. The goal of the good discharge planner is to ensure that the actual setting of postacute care matches the appropriate setting as closely as possible. Nevertheless, every discharge planner must operate under the constraints imposed by the availability of home health, SNF, and rehabilitation hospital providers in the local area; the pressures imposed by the hospital for which the planner works; and by the preferences of the patient and the patient's family. What is here termed discharge planning therefore incorporates not only the efforts of the planner, social services workers, physician, and family to place the patient in the location best suited to recovery, but also the manner in which the planner negotiates among the available choices in the face of possible pressure for expeditious patient discharge.

The ability of home health agencies to hire and retain physical, occupational, and speech therapists appears to vary markedly from region to region and between urban and rural areas. Several of the experts contacted for this project pointed out that some elderly persons, especially in rural areas and small towns, would routinely be discharged from hospitals to SNFs because local home health agencies could not provide therapy. As noted in the previous chapter, lack of availability of home health care has been cited in the literature as a possible reason for greater use of SNF care by rural beneficiaries. Rehabilitation hospitals, according to some, are also concentrated in larger cities, which may also tend to increase placement in SNFs outside metropolitan areas.

Provider preferences and behavior may impinge strongly on postacute placement in some circumstances and not at all in others. SNFs themselves may be quite reluctant to admit any patient whose expected per diem cost exceeds the daily Medicare prospective payment amount. Industry representatives point to those needing intensive respiratory therapy, complex wound care, or costly medication as tending to produce losses for SNFs. While some of the experts we interviewed pointed out that denying admission to certain patients on financial grounds is illegal, most believed that this occurred in one form or another. The behavior of the discharging hospital may also affect postacute placement. The financial pressure on hospitals to discharge Medicare beneficiaries as early as possible is certainly communicated to discharge planners and may lead them to accept a discharge location they would otherwise reject.[3]

Aversion to the nursing home setting is probably stronger than to any other health care setting. Individual and family preferences may therefore affect discharge to SNFs quite strongly, even when they are appropriate. Some patients may be discharged home (with or without home care) either because they object strongly to nursing home placement or because the patient's family objects that the nearest SNF with an available bed is too far away.

Access to SNF and other settings for post-hospital care is captured by the alignment of appropriate settings as determined in the upper portion of Figure V.1, with actual settings as determined in the lower portion of the figure. Identified groups of beneficiaries for whom actual placement in SNF falls well short of the appropriate placement may be said to lack access to necessary SNF care.

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[3] This situation raises a thorny issue in characterizing access to SNF care. If one or more SNFs reject a potential patient as being too unstable for placement, does this rejection indicate a lack of access to SNF care or rather a lack of proper access to hospital care? If the SNFs accepted the same sort of patient prior to implementation of SNF prospective payment, does this necessarily indicate that the access problem lies with SNFs and not with the hospital? There can be no clear answer, because the appropriateness of discharge from hospital to SNF depends on the clinical sophistication of the SNF. The sophistication of the SNF may in turn depend on the Medicare payment rate.

Though not shown in Figure V.1, access to clinically necessary care requires placement to the appropriate setting and also provision of proper treatments and therapeutic services in that setting. The services at issue are identified as "postacute care needs" in the figure. Whether these services are actually provided depends largely on provider behavior. Under prospective payment in particular, providers may be inclined to stint on services to residents, because the provider is at full financial risk for these services. Again, the alignment of services considered clinically necessary with services actually provided is a measure of access to necessary care.

The distinction between access to clinical or therapeutic services within SNFs and quality of care provided by SNFs is not easily made. One might of course attempt to differentiate between, say, the provision of speech therapy or wound care or gait training to SNF residents who require these services (access) and the skill and care with which these services are performed (quality of care). In this spirit, Asch et al. (1995) assert that access is a prerequisite to quality care but insufficient to represent quality care. At some point, however, the distinction becomes wholly artificial, as MedPAC (1998) has acknowledged. Should variations in the skill with which SNF nurses discern which residents can most benefit from gait training or a toileting program be ascribed to differences in access or quality? Moreover, the data necessary to distinguish the performance of a service from the quality with which the service was provided may not exist anywhere, certainly not in any administrative data files.

Lack of access to appropriate services can be expected to lead to adverse outcomes for some SNF residents. Some outcomes may be quite subtle and difficult to detect; others may be easy to observe. A number of indicators of care-sensitive outcomes have been proposed, ranging from increased probability of pressure sores, dehydration, and incontinence to increased pain, infections, and mortality. At present, there is little evidence linking changes in adverse outcomes to the rate at which specific clinical services are provided.

B. BARRIERS TO IMPLEMENTING THE FRAMEWORK

The conceptual framework introduced in the previous section is simply that—a means of organizing definitions and ideas to clarify thinking and guide future work. If sufficient data were available and if professional and scientific agreement regarding the proper amount and setting of postacute care were high, then we might regard the framework of Figure V.1 as representing an empirical model that could be estimated and used to assess the access to appropriate care. The framework suggests that access to SNF care is appropriately measured by the degree of alignment between the level of actual and appropriate admission to SNFs. Transforming the framework into an operational model of access lies well in the future, for several reasons:

There is no standard definition of SNF care. Before prospective payment for SNF care, the Medicare program reimbursed SNFs for a semiprivate room, meals, regular nursing services, rehabilitation services (including physical, occupational, and speech therapy), drugs furnished by the facility, medical supplies, and use of appliances (Silverman 1991). Substantial variation in the sophistication of care provided by SNFs emerged, especially during the 1980s and 1990s. While many facilities admitted few Medicare patients and provided only services required under the benefit, others began to provide a much more complex level of care that included intravenous therapy, ventilator care, and advanced coronary care—services that came to be known as subacute care. Anecdotal evidence and interviews with experts conducted for this project suggest that facilities have increasingly curtailed their provision of such care and now insist that patients be discharged from acute care to SNFs in a more clinically stable condition than previously required.

Without a clear understanding of what services should be required of SNFs, it is difficult to interpret delays in the discharge of patients from hospitals to SNFs. Under what circumstances should an increased reluctance of SNFs to admit clinically acute persons be regarded as a decrease in access? In the absence of a sharp distinction between care appropriate to the end of hospital stays and care appropriate to the beginning of SNF stays, there is no obvious answer.

Data necessary to determine appropriate placement in SNFs or any other postacute setting are not readily available. As we have seen, clinical guidelines for needed postacute care rely almost completely on variables describing a person's primary diagnosis, medical acuity, and comorbid conditions. Nearly all clinicians and providers agree, however, that the proper setting for postacute care also depends strongly on the degree of functional and cognitive independence of the patient; the availability, motivation, and competence of informal caregivers; the layout of the patient's home; and the accessibility of transportation. No administrative data set now captures such information, nor is any source of such data, other than periodic surveys such as the Medicare Current Beneficiary Survey, likely to emerge soon.

There is no consensus regarding proper placement in SNFs or other postacute settings. In some respects, the absence of data describing the patient's functional condition and home environment is not itself limiting, because of the absence of agreement on the relationship between these variables and appropriate postacute placement. The literature is nearly silent on the matter of placement to SNFs as opposed to rehabilitation hospitals or home health care. Although numerous studies have examined the characteristics associated with observed placement of patients to SNF and other postacute settings, studies aimed at identifying which postacute settings should be recommended, based on patients' diagnoses and clinical condition, are only now beginning to appear. Kramer et al. (1997) compared outcomes for Medicare patients who were diagnosed with stroke and hip fracture, and placed in rehabilitation facilities

(RFs) and in SNFs. After adjusting for premorbid residence and function, caregiver availability, comorbid illness, and cognitive and sensory deficits, they found that stroke patients were more likely to return to the community and more likely to show improvement in ADLs when placed in RFs rather than SNFs. No differences in outcomes were found for hip fracture patients placed in RFs as compared with SNFs. In both cases, Medicare cost was significantly higher for those placed in RFs. Perhaps for this reason, the authors suggest that hip fracture patients should not ordinarily be admitted to RFs but stop short of recommending that all stroke patients be admitted to one, asserting instead that "if a SNF is to be used for stroke rehabilitation, we recommend seeking a facility offering the types of services provided in the RFs."

Kane et al. (2000) studied functional outcomes for Medicare beneficiaries who had diagnoses of stroke, chronic obstructive pulmonary disease, CHF, hip procedures, and hip fracture, and who were discharged from hospital to home without formal home care, home with home care, an RF, and a nursing home. At no point do the authors explicitly limit the definition of nursing home to SNF, though the limitation of subjects to Medicare beneficiaries discharged from a hospital implies that most of those discharged to nursing homes were receiving care under the SNF benefit. Their estimates suggest that the proportion of patients admitted to a nursing home with CHF (8 percent) and hip procedures (20 percent) was nearly optimal, but that most of those admitted with the diagnosis of stroke (22 percent) and hip fracture (46 percent) would have improved more had they instead been discharged home with formal home care or to RFs.

C. SUMMARY

Nearly all Medicare beneficiaries discharged from the hospital receive follow-up care in one of four settings: (1) home without formal home care; (2) home with formal home care, usually provided by a Medicare-certified home health agency; (3) a SNF; or (4) an RF. The setting is selected by and on behalf of hospitalized patients, who may rely heavily on the recommendations of hospital discharge planners. The choice among settings may be limited to a greater or lesser degree by the local supply of home health services and institutional providers and by the willingness of providers to accept patients, based on their care needs and on the payment the provider expects to receive.

The patient's primary diagnosis, acuity of illness or injury, comorbidities, and functional limitations determine the type and intensity of services required after hospital discharge. Some of these services may be identified by consulting clinical profiles; others will be recommended by the patient's physician and other clinicians. The clinically appropriate setting for postacute care is determined by the interplay of necessary services, the frailty and functional status of the patient, and the degree of informal support available to the patient at home. Access to a SNF may therefore be represented by the ratio of the number of persons in a calendar quarter or a year for whom SNF is the clinically appropriate setting to the number for whom a SNF is the actual setting of care.

VI. CONCLUSIONS

This project investigated whether administrative data could be used together with existing clinical guidelines or informed professional judgment to construct indicators of access to clinically needed SNF care, understood as appropriate discharge of hospitalized patients to the SNF setting and the receipt of recommended care by SNF residents. We pursued three alternative indicators of access to SNF care: (1) measures of appropriate SNF placement, (2) measures of clinically necessary services received by SNF residents, and (3) measures of those resident outcomes believed to be sensitive to inadequate SNF care. Our investigation led us to five main conclusions, presented below.

1. *Existing clinical guidelines provide recommendations for care of people with many of the conditions common among hospitalized Medicare beneficiaries. No guideline recommends any particular setting for postacute care.*

We located clinical guidelines for care of many conditions common to beneficiaries who receive post-hospital care in SNFs: congestive heart failure, stroke, hip fracture, pneumonia, diabetes, depression, pressure ulcer, urinary incontinence, and pain. The guidelines recommended treatments, therapies, degrees of monitoring, and courses of medication. Having specified these interventions, however, the guidelines were silent about whether the home (with or without formal home care), an RF, or a SNF was the best place for postacute patients. No guideline or clinical pathway that we could find made any recommendation regarding clinically necessary or appropriate settings for post-hospital care.

2. *Administrative data may be used to verify that some treatments recommended by clinical guidelines were received.*

About one-half or fewer of the individual recommendations found in the guidelines could be verified using administrative data. In nearly all cases, the nursing home MDS is the necessary source. The recommendations that can be verified in this way tend to be more general than recommendations that cannot be verified. Thus, the provision of physical therapy for patients with stroke or hip fracture, or the presence of a toileting plan for patients with urinary incontinence, can both be verified using the MDS. Debridement of necrotic tissue for patients with pressure ulcers cannot be verified.

3. Administrative data can probably be used to construct profiles of certain types of hospitalized Medicare beneficiaries who should, in most cases, be discharged to a SNF.

Most of the experts interviewed for the project agreed that administrative data—chiefly Medicare hospital claims data—could be used to identify beneficiaries who should, in most cases, be discharged from the hospital to a SNF. A few experts suggested characteristics that might be extracted from such claims to construct profiles of patients who typically require SNF care. Not all experts agreed, however. Some argued that the variability of SNF care, the importance of nonclinical factors such as informal caregiving and the nature of the home environment, in addition to the many nuances of an individual patient's condition, make it impossible to predict, using administrative data alone, who really belongs in a SNF or RF and who belongs at home.

4. Administrative data will support some measures of resident outcomes related to barriers to access or to poor quality of postacute care.

State nursing home surveyors have begun using information from the MDS to assess the quality of care provided by nursing homes. HCFA currently supports several research efforts engaged in constructing quality indicators. Thus, many new indicators and methods for risk adjustment of these indicators should soon become available. Generally speaking, however, outcome measures are regarded as the result of poor quality of care. They have not been linked to specific treatments or tests that were not provided or were performed poorly, and are not likely to be so linked in the future.

5. Progress in measuring access to necessary SNF care will require greater professional consensus and additional administrative data.

To our knowledge, there have been no attempts to reach professional consensus or codify clinical practice regarding proper settings for postacute care. Hence, any empirical effort to identify clinical profiles of beneficiaries requiring SNF care, such as those presented in Chapter III, would first require one or more consensus panels of physicians and other providers to ensure that the profiles themselves were broadly acceptable to experienced professionals.

A particular problem in identifying hospitalized persons requiring SNF care is the lack of administrative data describing the patient's cognitive and functional status and ability to remain at home—characteristics identified by many experts as important for determining the appropriate setting for post-hospital care. Were such data to become available, perhaps through adoption of UNAI for hospitalized Medicare beneficiaries, it might become possible to develop explicit pathways to home care, rehabilitation hospital, and SNF.

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APPENDIX A

MEDICARE HOSPITAL AND SNF CLAIM RECORD (PARTIAL CONTENTS)

APPENDIX A

MEDICARE HOSPITAL AND SNF CLAIM RECORD (PARTIAL CONTENTS)

Variable Name	Content
Claim Patient 6 Position Surname	The first 6 positions of the Medicare patient's surname as reported by the provider on the claim.
Claim Patient 1st Initial Given Name	The first initial of the Medicare patient's given name as reported by the provider on the claim.
Claim Patient 1st Initial Middle Name	The first initial of the Medicare patient's middle name as reported by the provider on the claim.
Beneficiary Claim Account Number	The number identifying the primary beneficiary under the Social Security Administration or Railroad Retirement Benefit programs submitted.
NCH Category Equatable Beneficiary Identification Code	The code categorizing groups of beneficiary identification codes (BICs) representing similar relationships between the beneficiary and the primary wage earner.
Claim Bill Type Group	Type of facility submitting claim (inpatient hospital, SNF, home health agency, intermediate care facility, etc.).
Claim Principal Diagnosis Code	ICD-9 diagnosis code identifying the diagnosis, condition, problem, or other reason for the admission, encounter, or visit shown in the medical record to be chiefly responsible for the services provided. A total of 10 (1 principal and 9 secondary) diagnosis codes can be entered.
Provider Number	Identification number of the institutional provider certified by Medicare to provide services to the beneficiary.
Claim from Date	The first day on the billing statement covering services rendered to the beneficiary.
Claim Through Date	The last day on the billing statement covering services rendered to the beneficiary.
Patient Discharge Status Code	The code used to identify the status of the patient (discharged to home/self care, discharged to a SNF, discharged home with home health, etc.).
Claim Admission Date	On an institutional claim, the date the beneficiary was admitted to the hospital, SNF, etc.).
Claim Source Inpatient Admission Code	The code indicating the means by which the beneficiary was admitted to the inpatient health care facility or SNF (transfer from hospital, physician referral, etc.).
NCH Revenue Center Trailer Indicator Code	The code identifying the revenue center (pharmacy; IV therapy; physical, speech, respiratory, or occupational therapy) to which a charge is billed. As many codes as appear on the claim will appear in the file.
Revenue Center Unit Count	A qualitative measure (unit) of services provided to a beneficiary associated with accommodation and ancillary revenue centers described on an institutional claim. Depending on the type of services, units are measured by the number of covered days in a particular accommodation, pints of blood, emergency room visits, clinic visits, dialysis treatments, outpatient therapy visits, and outpatient clinical diagnostic laboratory tests.
Revenue Center Rate Amount	Charges relating to the unit cost associated with the revenue center code.

Source: Health Care Financing Administration. Inpatient Standard Analytical Variable Length File, Version H, 1998.

Note: This Appendix presents the partial contents of the standard analytical file, which contains over 200 variables. The actual file layout is a complex document designed for technical users. We present some of the relevant variables in the file that would be useful in developing measures of access to SNF care.

NCH = National Claims History

APPENDIX B

MINIMUM DATA SET (MDS)

Resident ______________________________ Numeric Identifier ______________________________

MINIMUM DATA SET (MDS) — *VERSION 2.0*

FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

BACKGROUND (FACE SHEET) INFORMATION AT ADMISSION

SECTION AB. DEMOGRAPHIC INFORMATION

1.	DATE OF ENTRY	*Date the stay began. Note — Does not include readmission if record was closed at time of temporary discharge to hospital, etc. In such cases, use prior admission date* ☐☐ — ☐☐ — ☐☐☐☐ Month Day Year	
2.	ADMITTED FROM (AT ENTRY)	1. Private home/apt. with no home health services 2. Private home/apt. with home health services 3. Board and care/assisted living/group home 4. Nursing home 5. Acute care hospital 6. Psychiatric hospital, MR/DD facility 7. Rehabilitation hospital 8. Other	☐
3.	LIVED ALONE (PRIOR TO ENTRY)	0. No 1. Yes 2. In other facility	☐
4.	ZIP CODE OF PRIOR PRIMARY RESIDENCE	☐☐☐☐☐	
5.	RESIDENTIAL HISTORY 5 YEARS PRIOR TO ENTRY	(***Check all settings** resident **lived** in during 5 years prior to date of entry given in item AB1 above*)	
		Prior stay at this nursing home	a.
		Stay in other nursing home	b.
		Other residential facility—board and care home, assisted living, group home	c.
		MH/psychiatric setting	d.
		MR/DD setting	e.
		NONE OF ABOVE	f.
6.	LIFETIME OCCUPATION(S) [Put "/" between two occupations]	☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐	
7.	EDUCATION (*Highest Level Completed*)	1. No schooling 2. 8th grade/less 3. 9-11 grades 4. High school 5. Technical or trade school 6. Some college 7. Bachelor's degree 8. Graduate degree	☐
8.	LANGUAGE	(*Code for correct response*) a. Primary Language 0. English 1. Spanish 2. French 3. Other	☐
		b. If other, specify ☐☐☐☐☐☐☐☐☐	
9.	MENTAL HEALTH HISTORY	Does resident's RECORD indicate any history of mental retardation, mental illness, or developmental disability problem? 0. No 1. Yes	☐
10.	CONDITIONS RELATED TO MR/DD STATUS	(***Check all conditions** that are related to MR/DD status that were manifested before age 22, and are likely to continue indefinitely*)	
		Not applicable—no MR/DD (Skip to AB11)	a.
		MR/DD with organic condition	
		Down's syndrome	b.
		Autism	c.
		Epilepsy	d.
		Other organic condition related to MR/DD	e.
		MR/DD with no organic condition	f.
11.	DATE BACKGROUND INFORMATION COMPLETED	☐☐ — ☐☐ — ☐☐☐☐ Month Day Year	

SECTION AC. CUSTOMARY ROUTINE

1.	CUSTOMARY ROUTINE (*In year prior to DATE OF ENTRY to this nursing home, or year last in community if now being admitted from another nursing home*)	(***Check all that apply. If all information UNKNOWN, check last box only.***)	
		CYCLE OF DAILY EVENTS	
		Stays up late at night (e.g., after 9 pm)	a.
		Naps regularly during day (at least 1 hour)	b.
		Goes out 1+ days a week	c.
		Stays busy with hobbies, reading, or fixed daily routine	d.
		Spends most of time alone or watching TV	e.
		Moves independently indoors (with appliances, if used)	f.
		Use of tobacco products at least daily	g.
		NONE OF ABOVE	h.
		EATING PATTERNS	
		Distinct food preferences	i.
		Eats between meals all or most days	j.
		Use of alcoholic beverage(s) at least weekly	k.
		NONE OF ABOVE	l.
		ADL PATTERNS	
		In bedclothes much of day	m.
		Wakens to toilet all or most nights	n.
		Has irregular bowel movement pattern	o.
		Showers for bathing	p.
		Bathing in PM	q.
		NONE OF ABOVE	r.
		INVOLVEMENT PATTERNS	
		Daily contact with relatives/close friends	s.
		Usually attends church, temple, synagogue (etc.)	t.
		Finds strength in faith	u.
		Daily animal companion/presence	v.
		Involved in group activities	w.
		NONE OF ABOVE	x.
		UNKNOWN—Resident/family unable to provide information	y.

SECTION AD. FACE SHEET SIGNATURES

SIGNATURES OF PERSONS COMPLETING FACE SHEET:

a. Signature of RN Assessment Coordinator	Date

I certify that the accompanying information accurately reflects resident assessment or tracking information for this resident and that I collected or coordinated collection of this information on the dates specified. To the best of my knowledge, this information was collected in accordance with all Medicare and Medicaid requirements. I understand that this information is used as a basis for ensuring that patients receive appropriate and quality care, and as a basis for payment from federal funds. I further understand that payment of such federal funds and continued participation in the government-funded health care programs is conditioned on the accuracy and truthfulness of this information, and that I may be personally subject to or may subject my organization to substantial criminal, civil, and/or administrative penalties for submitting false information. I also certify that I am authorized to submit this information by this facility on its behalf.

Signature and Title	Sections	Date
b.		
c.		
d.		
e.		
f.		
g.		

☐ = When box blank, must enter number or letter [a.] = When letter in box, check if condition applies

Resident ______________________________ Numeric Identifier ______________________________

MINIMUM DATA SET (MDS) — *VERSION 2.0*
FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING
FULL ASSESSMENT FORM

(Status in last 7 days, unless other time frame indicated)

SECTION A. IDENTIFICATION AND BACKGROUND INFORMATION

1.	**RESIDENT NAME**	a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)	
2.	**ROOM NUMBER**	☐☐☐☐☐	
3.	**ASSESSMENT REFERENCE DATE**	a. *Last day of MDS observation period* ☐☐ – ☐☐ – ☐☐☐☐ Month Day Year b. Original (0) or corrected copy of form (enter number of correction)	
4a.	**DATE OF REENTRY**	Date of reentry from most recent temporary discharge to a hospital in last 90 days (or since last assessment or admission if less than 90 days) ☐☐ – ☐☐ – ☐☐☐☐ Month Day Year	
5.	**MARITAL STATUS**	1. Never married 2. Married 3. Widowed 4. Separated 5. Divorced	☐
6.	**MEDICAL RECORD NO.**	☐☐☐☐☐☐☐☐☐☐☐☐	
7.	**CURRENT PAYMENT SOURCES FOR N.H. STAY**	(*Billing Office to indicate. **check all that apply in last 30 days***) Medicaid per diem a. Medicare per diem b. Medicare ancillary part A c. Medicare ancillary part B d. CHAMPUS per diem e. VA per diem f. Self or family pays for full per diem g. Medicaid resident liability or Medicare co-payment h. Private insurance per diem (including co-payment) i. Other per diem j.	
8.	**REASONS FOR ASSESSMENT** [***Note—If this is a discharge or reentry assessment, only a limited subset of MDS items need be completed***]	a. Primary reason for assessment 1. Admission assessment (required by day 14) 2. Annual assessment 3. Significant change in status assessment 4. Significant correction of prior full assessment 5. Quarterly review assessment 6. Discharged—return not anticipated 7. Discharged—return anticipated 8. Discharged prior to completing initial assessment 9. Reentry 10. Significant correction of prior quarterly assessment 0. *NONE OF ABOVE* b. ***Codes for assessments required for Medicare PPS or the State*** *1. Medicare 5 day assessment* *2. Medicare 30 day assessment* *3. Medicare 60 day assessment* *4. Medicare 90 day assessment* *5. Medicare readmission/return assessment* *6. Other state required assessment* *7. Medicare 14 day assessment* *8. Other Medicare required assessment*	☐☐ ☐
9.	**RESPONSIBILITY/ LEGAL GUARDIAN**	(***Check all that apply***) Legal guardian d. Other legal oversight d. Durable power of attorney/health care c. Durable power attorney/financial d. Family member responsible e. Patient responsible for self f. *NONE OF ABOVE* g.	
10.	**ADVANCED DIRECTIVES**	(*For those items with supporting **documentation** in the medical record, **check all that apply***) Living will a. Do not resuscitate b. Do not hospitalize c. Organ donation d. Autopsy request e. Feeding restrictions f. Medication restrictions g. Other treatment restrictions h. *NONE OF ABOVE* i.	

SECTION B. COGNITIVE PATTERNS

1.	**COMATOSE**	(*Persistent vegetative state/no discernible consciousness*) 0. No 1. Yes (If yes, skip to Section G)	☐
2.	**MEMORY**	(*Recall of what was learned or known*) a. Short-term memory OK—seems/appears to recall after 5 minutes 0. Memory OK 1. Memory problem b. Long-term memory OK—seems/appears to recall long past 0. Memory OK 1. Memory problem	☐ ☐
3.	**MEMORY/ RECALL ABILITY**	(***Check all that resident was normally able to recall during last 7 days***) Current season a. Location of own room b. Staff names/faces c. That he/she is in a nursing home d. *NONE OF ABOVE* are recalled e.	
4.	**COGNITIVE SKILLS FOR DAILY DECISION-MAKING**	(*Made decisions regarding tasks of daily life*) 0. *INDEPENDENT*—decisions consistent/reasonable 1. *MODIFIED INDEPENDENCE*—some difficulty in new situations only 2. *MODERATELY IMPAIRED*—decisions poor; cues/supervision required 3. *SEVERELY IMPAIRED*—never/rarely made decisions	☐
5.	**INDICATORS OF DELIRIUM—PERIODIC DISORDERED THINKING/ AWARENESS**	(*Code for behavior in the **last 7 days.***) [***Note: Accurate assessment requires conversations with staff and family who have direct knowledge of resident's behavior over this time***]. 0. Behavior not present 1. Behavior present, not of recent onset 2. Behavior present, over last 7 days appears different from resident's usual functioning (e.g., new onset or worsening)	
		a. EASILY DISTRACTED—(e.g., difficulty paying attention, gets sidetracked)	☐
		b. PERIODS OF ALTERED PERCEPTION OR AWARENESS OF SURROUNDINGS—(e.g., moves lips or talks to someone not present; believes he/she is somewhere else; confuses night and day)	☐
		c. EPISODES OF DISORGANIZED SPEECH—(e.g., speech is incoherent, nonsensical, irrelevant, or rambling from subject to subject; loses train of thought)	☐
		d. PERIODS OF RESTLESSNESS—(e.g., fidgeting or picking at skin, clothing, napkins, etc; frequent position changes; repetitive physical movements or calling out)	☐
		e. PERIODS OF LETHARGY—(e.g., sluggishness; staring into space, difficult to arouse; little body movement)	☐
		f. MENTAL FUNCTION VARIES OVER THE COURSE OF THE DAY—(e.g., sometimes better, sometimes worse; behaviors sometimes present, sometimes not)	☐
6.	**CHANGE IN COGNITIVE STATUS**	Resident's cognitive status, skills, or abilities have changed as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated	☐

SECTION C. COMMUNICATION/HEARING PATTERNS

1.	**HEARING**	(*With hearing appliance, if used*) 0. *HEARS ADEQUATELY*—normal talk, TV, phone 1. *MINIMAL DIFFICULTY* when not in quiet setting 2. *HEARS IN SPECIAL SITUATIONS ONLY*—speaker has to adjust tonal quality and speak distinctly 3. *HIGHLY IMPAIRED*/absence of useful hearing	☐
2.	**COMMUNICATION DEVICES/ TECHNIQUES**	(***Check all that apply** during last 7 days*) Hearing aid, present and used a. Hearing aid, present and not used regularly b. Other receptive comm. techniques used (e.g., lip reading) c. *NONE OF ABOVE* d.	
3.	**MODES OF EXPRESSION**	(***Check all used by resident to make needs known***) Speech c. Writing messages to express or clarify needs b. American sign language or Braille b. Signs/gestures/sounds d. Communication board e. Other f. *NONE OF ABOVE* g.	
4.	**MAKING SELF UNDERSTOOD**	(*Expressing information content—however able*) 0. *UNDERSTOOD* 1. *USUALLY UNDERSTOOD*—difficulty finding words or finishing thoughts 2. *SOMETIMES UNDERSTOOD*—ability is limited to making concrete requests 3. *RARELY/NEVER UNDERSTOOD*	☐
5.	**SPEECH CLARITY**	(*Code for speech in the **last 7 days***) 0. *CLEAR SPEECH*—distinct, intelligible words 1. *UNCLEAR SPEECH*—slurred, mumbled words 2. *NO SPEECH*—absence of spoken words	☐
6.	**ABILITY TO UNDERSTAND OTHERS**	(*Understanding verbal information content—however able*) 0. *UNDERSTANDS* 1. *USUALLY UNDERSTANDS*—may miss some part/intent of message 2. *SOMETIMES UNDERSTANDS*—responds adequately to simple, direct communication 3. *RARELY/NEVER UNDERSTANDS*	☐
7.	**CHANGE IN COMMUNICATION/ HEARING**	Resident's ability to express, understand, or hear information has changed as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated	☐

☐ = When box blank, must enter number or letter   a. = When letter in box, check if condition applies

Resident ______________________ Numeric Identifier ______________________

SECTION D. VISION PATTERNS

1.	VISION	(*Ability to see in adequate light and with glasses if used*) 0. *ADEQUATE*—sees fine detail, including regular print in newspapers/books 1. *IMPAIRED*—sees large print, but not regular print in newspapers/books 2. *MODERATELY IMPAIRED*—limited vision; not able to see newspaper headlines, but can identify objects 3. *HIGHLY IMPAIRED*—object identification in question, but eyes appear to follow objects 4. *SEVERELY IMPAIRED*—no vision or sees only light, colors, or shapes; eyes do not appear to follow objects	
2.	VISUAL LIMITATIONS/ DIFFICULTIES	Side vision problems—decreased peripheral vision (e.g., leaves food on one side of tray, difficulty traveling, bumps into people and objects, misjudges placement of chair when seating self)	a.
		Experiences any of following: sees halos or rings around lights; sees flashes of light; sees "curtains" over eyes	b.
		NONE OF ABOVE	c.
3.	VISUAL APPLIANCES	Glasses; contact lenses; magnifying glass 0. No 1. Yes	

SECTION E. MOOD AND BEHAVIOR PATTERNS

1.	INDICATORS OF DEPRESSION, ANXIETY, SAD MOOD	(***Code for indicators observed in last 30 days, irrespective of the assumed cause***) 0. Indicator not exhibited in last 30 days 1. Indicator of this type exhibited up to five days a week 2. Indicator of this type exhibited daily or almost daily (6, 7 days a week)	
		VERBAL EXPRESSIONS OF DISTRESS a. Resident made negative statements—e.g., "*Nothing matters; Would rather be dead; What's the use; Regrets having lived so long; Let me die*" b. Repetitive questions—e.g., "*Where do I go; What do I do?*" c. Repetitive verbalizations—e.g., calling out for help, ("*God help me*") d. Persistent anger with self or others—e.g., easily annoyed, anger at placement in nursing home; anger at care received e. Self deprecation—e.g., "*I am nothing; I am of no use to anyone*" f. Expressions of what appear to be unrealistic fears—e.g., fear of being abandoned, left alone, being with others g. Recurrent statements that something terrible is about to happen—e.g., believes he or she is about to die, have a heart attack	h. Repetitive health complaints—e.g., persistently seeks medical attention, obsessive concern with body functions i. Repetitive anxious complaints/concerns (non-health related) e.g., persistently seeks attention/ reassurance regarding schedules, meals, laundry, clothing, relationship issues **SLEEP-CYCLE ISSUES** j. Unpleasant mood in morning k. Insomnia/change in usual sleep pattern **SAD, APATHETIC, ANXIOUS APPEARANCE** l. Sad, pained, worried facial expressions—e.g., furrowed brows m. Crying, tearfulness n. Repetitive physical movements—e.g., pacing, hand wringing, restlessness, fidgeting, picking **LOSS OF INTEREST** o. Withdrawal from activities of interest—e.g., no interest in long standing activities or being with family/friends p. Reduced social interaction
2.	MOOD PERSISTENCE	**One or more indicators of depressed, sad or anxious mood were not easily altered by attempts to "cheer up", console, or reassure the resident over last 7 days** 0. No mood indicators 1. Indicators present, easily altered 2. Indicators present, not easily altered	
3.	CHANGE IN MOOD	Resident's mood status has changed as compared to status of **90** days ago (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated	

			(A)	(B)
4.	BEHAVIORAL SYMPTOMS	(A) ***Behavioral symptom frequency in last 7 days*** 0. Behavior not exhibited in last 7 days 1. Behavior of this type occurred 1 to 3 days in last 7 days 2. Behavior of this type occurred 4 to 6 days, but less than daily 3. Behavior of this type occurred daily (B) ***Behavioral symptom alterability in last 7 days*** 0. Behavior not present OR behavior was easily altered 1. Behavior was not easily altered		
		a. WANDERING (moved with no rational purpose, seemingly oblivious to needs or safety)		
		b. VERBALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were threatened, screamed at, cursed at)		
		c. PHYSICALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were hit, shoved, scratched, sexually abused)		
		d. SOCIALLY INAPPROPRIATE/DISRUPTIVE BEHAVIORAL SYMPTOMS (made disruptive sounds, noisiness, screaming, self-abusive acts, sexual behavior or disrobing in public, smeared/threw food/feces, hoarding, rummaged through others' belongings)		
		e. RESISTS CARE (resisted taking medications/ injections, ADL assistance, or eating)		
5.	CHANGE IN BEHAVIORAL SYMPTOMS	Resident's behavior status has changed as compared to **status of 90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated		

SECTION F. PSYCHOSOCIAL WELL-BEING

1.	SENSE OF INITIATIVE/ INVOLVEMENT	At ease interacting with others	a.
		At ease doing planned or structured activities	b.
		At ease doing self-initiated activities	c.
		Establishes own goals	d.
		Pursues involvement in life of facility (e.g., makes/keeps friends; involved in group activities; responds positively to new activities, assists at religious services)	e.
		Accepts invitations into most group activities	f.
		NONE OF ABOVE	g.
2.	UNSETTLED RELATIONSHIPS	Covert/open conflict with or repeated criticism of staff	a.
		Unhappy with roommate	b.
		Unhappy with residents other than roommate	c.
		Openly expresses conflict/anger with family/friends	d.
		Absence of personal contact with family/friends	e.
		Recent loss of close family member/friend	f.
		Does not adjust easily to change in routines	g.
		NONE OF ABOVE	h.
3.	PAST ROLES	Strong identification with past roles and life status	a.
		Expresses sadness/anger/empty feeling over lost roles/status	b.
		Resident perceives that daily routine (customary routine, activities) is very different from prior pattern in the community	c.
		NONE OF ABOVE	d.

SECTION G. PHYSICAL FUNCTIONING AND STRUCTURAL PROBLEMS

			(A) SELF-PERF	(B) SUPPORT
1.		(A) ADL SELF-PERFORMANCE—(***Code for resident's PERFORMANCE OVER ALL SHIFTS during last 7 days—Not including setup***) 0. *INDEPENDENT*—No help or oversight —OR— Help/oversight provided only 1 or 2 times during last 7 days 1. SUPERVISION—Oversight, encouragement or cueing provided 3 or more times during last7 days —OR— Supervision (3 or more times) plus physical assistance provided only 1 or 2 times during last 7 days 2. *LIMITED ASSISTANCE*—Resident highly involved in activity; received physical help in guided maneuvering of limbs or other nonweight bearing assistance 3 or more times —OR—More help provided only 1 or 2 times during last 7 days 3. *EXTENSIVE ASSISTANCE*—While resident performed part of activity, over last 7-day period, help of following type(s) provided 3 or more times: — Weight-bearing support — Full staff performance during part (but not all) of last 7 days 4. *TOTAL DEPENDENCE*—Full staff performance of activity during entire 7 days 8. *ACTIVITY DID NOT OCCUR* during entire 7 days		
		(B) ADL SUPPORT PROVIDED—(***Code for MOST SUPPORT PROVIDED OVER ALL SHIFTS during last 7 days; code regardless of*** *resident's self-performance classification*) 0. No setup or physical help from staff 1. Setup help only 2. One person physical assist 3. Two+ persons physical assist 8. ADL activity itself did not occur during entire 7 days		
a.	BED MOBILITY	How resident moves to and from lying position, turns side to side, and positions body while in bed		
b.	TRANSFER	How resident moves between surfaces—to/from: bed, chair, wheelchair, standing position (EXCLUDE to/from bath/toilet)		
c.	WALK IN ROOM	How resident walks between locations in his/her room		
d.	WALK IN CORRIDOR	How resident walks in corridor on unit		
e.	LOCOMOTION ON UNIT	How resident moves between locations in his/her room and adjacent corridor on same floor. If in wheelchair, self-sufficiency once in chair		
f.	LOCOMOTION OFF UNIT	How resident moves to and returns from off unit locations (e.g., areas set aside for dining, activities, or treatments). **If facility has only one floor**, how resident moves to and from distant areas on the floor. If in wheelchair, self-sufficiency once in chair		
g.	DRESSING	How resident puts on, fastens, and takes off all items of **street clothing**, including donning/removing prosthesis		
h.	EATING	How resident eats and drinks (regardless of skill). Includes intake of nourishment by other means (e.g., tube feeding, total parenteral nutrition)		
i.	TOILET USE	How resident uses the toilet room (or commode, bedpan, urinal); transfer on/off toilet, cleanses, changes pad, manages ostomy or catheter, adjusts clothes		
j.	PERSONAL HYGIENE	How resident maintains personal hygiene, including combing hair, brushing teeth, shaving, applying makeup, washing/drying face, hands, and perineum (EXCLUDE baths and showers)		

Resident ____________________ Numeric Identifier ____________________

2.	**BATHING**	How resident takes full-body bath/shower, sponge bath, and transfers in/out of tub/shower (EXCLUDE washing of back and hair.) ***Code for most dependent in self-performance and support.*** (A) BATHING SELF-PERFORMANCE codes appear below 0. Independent—No help provided 1. Supervision—Oversight help only 2. Physical help limited to transfer only 3. Physical help in part of bathing activity 4. Total dependence 8. Activity itself did not occur during entire 7 days *(Bathing support codes are as defined in **Item 1, code B above**)*	(A) ☐ (B) ☐
3.	**TEST FOR BALANCE** **(see training manual)**	(*Code for ability during test in the **last 7 days***) 0. Maintained position as required in test 1. Unsteady, but able to rebalance self without physical support 2. Partial physical support during test; or stands (sits) but does not follow directions for test 3. Not able to attempt test without physical help	
		a. Balance while standing	☐
		b. Balance while sitting—position, trunk control	☐
4.	**FUNCTIONAL LIMITATION IN RANGE OF MOTION** **(see training manual)**	(*Code for limitations during **last 7 days** that interfered with daily functions or placed resident at risk of injury*) (A) *RANGE OF MOTION* 0. No limitation 1. Limitation on one side 2. Limitation on both sides (B) *VOLUNTARY MOVEMENT* 0. No loss 1. Partial loss 2. Full loss	(A) (B)
		a. Neck	☐ ☐
		b. Arm—Including shoulder or elbow	☐ ☐
		c. Hand—Including wrist or fingers	☐ ☐
		d. Leg—Including hip or knee	☐ ☐
		e. Foot—Including ankle or toes	☐ ☐
		f. Other limitation or loss	☐ ☐

5.	**MODES OF LOCOMOTION**	(***Check all that apply** during **last 7 days***)			
		Cane/walker/crutch	a. ☐	Wheelchair primary mode of locomotion	d. ☐
		Wheeled self	b. ☐		
		Other person wheeled	c. ☐	*NONE OF ABOVE*	e. ☐
6.	**MODES OF TRANSFER**	(***Check all that apply** during **last 7 days***)			
		Bedfast all or most of time	a. ☐	Lifted mechanically	d. ☐
		Bed rails used for bed mobility or transfer	b. ☐	Transfer aid (e.g., slide board, trapeze, cane, walker, brace)	e. ☐
		Lifted manually	c. ☐	*NONE OF ABOVE*	f. ☐

7.	**TASK SEGMENTATION**	Some or all of ADL activities were broken into subtasks during **last 7 days** so that resident could perform them 0. No 1. Yes	☐
8.	**ADL FUNCTIONAL REHABILITATION POTENTIAL**	Resident believes he/she is capable of increased independence in at least some ADLs	a. ☐
		Direct care staff believe resident is capable of increased independence in at least some ADLs	b. ☐
		Resident able to perform tasks/activity but is very slow	c. ☐
		Difference in ADL Self-Performance or ADL Support, comparing mornings to evenings	d. ☐
		NONE OF ABOVE	e. ☐
9.	**CHANGE IN ADL FUNCTION**	Resident's ADL self-performance status has changed as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated	☐

SECTION H. CONTINENCE IN LAST 14 DAYS

1.	CONTINENCE SELF-CONTROL CATEGORIES (***Code for resident's PERFORMANCE OVER ALL SHIFTS***) 0. *CONTINENT*—Complete control *[includes use of indwelling urinary catheter or ostomy device that does not leak urine or stool]* 1. *USUALLY CONTINENT*—BLADDER, incontinent episodes once a week or less; BOWEL, less than weekly 2. *OCCASIONALLY INCONTINENT*—BLADDER, 2 or more times a week but not daily; BOWEL, once a week 3. *FREQUENTLY INCONTINENT*—BLADDER, tended to be incontinent daily, but some control present (e.g., on day shift); BOWEL, 2-3 times a week 4. *INCONTINENT*—Had inadequate control BLADDER, multiple daily episodes; BOWEL, all (or almost all) of the time		
a.	**BOWEL CONTINENCE**	Control of bowel movement, with appliance or bowel continence programs, if employed	☐
b.	**BLADDER CONTINENCE**	Control of urinary bladder function (if dribbles, volume insufficient to soak through underpants), with appliances (e.g., foley) or continence programs, if employed	☐

2.	**BOWEL ELIMINATION PATTERN**	Bowel elimination pattern regular—at least one movement every three days	a. ☐	Diarrhea	c. ☐
				Fecal impaction	d. ☐
		Constipation	b. ☐	*NONE OF ABOVE*	e. ☐
3.	**APPLIANCES AND PROGRAMS**	Any scheduled toileting plan	a. ☐	Did not use toilet room/commode/urinal	f. ☐
		Bladder retraining program	b. ☐	Pads/briefs used	g. ☐
		External (condom) catheter	c. ☐	Enemas/irrigation	h. ☐
		Indwelling catheter	d. ☐	Ostomy present	i. ☐
		Intermittent catheter	e. ☐	*NONE OF ABOVE*	j. ☐

4.	**CHANGE IN URINARY CONTINENCE**	Resident's urinary continence has changed as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated	☐

SECTION I. DISEASE DIAGNOSES

Check only those diseases that have a relationship to current ADL status, cognitive status, mood and behavior status, medical treatments, nursing monitoring, or risk of death. (Do not list inactive diagnoses)

1.	**DISEASES**	(***If none apply, CHECK the NONE OF ABOVE box***)			
		ENDOCRINE/METABOLIC/ NUTRITIONAL		Hemiplegia/Hemiparesis	v. ☐
				Multiple sclerosis	w. ☐
		Diabetes mellitus	a. ☐	Paraplegia	x. ☐
		Hyperthyroidism	b. ☐	Parkinson's disease	y. ☐
		Hypothyroidism	c. ☐	Quadriplegia	z. ☐
		HEART/CIRCULATION		Seizure disorder	aa. ☐
		Arteriosclerotic heart disease (ASHD)	d. ☐	Transient ischemic attack (TIA)	bb. ☐
				Traumatic brain injury	cc. ☐
		Cardiac dysrhythmias	e. ☐	**PSYCHIATRIC/MOOD**	
		Congestive heart failure	f. ☐	Anxiety disorder	dd. ☐
		Deep vein thrombosis	g. ☐	Depression	ee. ☐
		Hypertension	h. ☐	Manic depression (bipolar disease)	ff. ☐
		Hypotension	i. ☐		
		Peripheral vascular disease	j. ☐	Schizophrenia	gg. ☐
		Other cardiovascular disease	k. ☐	**PULMONARY**	
		MUSCULOSKELETAL		Asthma	hh. ☐
		Arthritis	l. ☐	Emphysema/COPD	ii. ☐
		Hip fracture	m. ☐	**SENSORY**	
		Missing limb (e.g., amputation)	n. ☐	Cataracts	jj. ☐
		Osteoporosis	o. ☐	Diabetic retinopathy	kk. ☐
		Pathological bone fracture	p. ☐	Glaucoma	ll. ☐
		NEUROLOGICAL		Macular degeneration	mm. ☐
		Alzheimer's disease	q. ☐	**OTHER**	
		Aphasia	r. ☐	Allergies	nn. ☐
		Cerebral palsy	s. ☐	Anemia	oo. ☐
		Cerebrovascular accident (stroke)	t. ☐	Cancer	pp. ☐
				Renal failure	qq. ☐
		Dementia other than Alzheimer's disease	u. ☐	*NONE OF ABOVE*	rr. ☐
2.	**INFECTIONS**	(***If none apply, CHECK the NONE OF ABOVE box***)			
		Antibiotic resistant infection (e.g., Methicillin resistant staph)	a. ☐	Septicemia	g. ☐
				Sexually transmitted diseases	h. ☐
		Clostridium difficile (c. diff.)	b. ☐	Tuberculosis	i. ☐
		Conjunctivitis	c. ☐	Urinary tract infection **in last 30 days**	j. ☐
		HIV infection	d. ☐	Viral hepatitis	k. ☐
		Pneumonia	e. ☐	Wound infection	l. ☐
		Respiratory infection	f. ☐	NONE OF ABOVE	m. ☐

3.	**OTHER CURRENT OR MORE DETAILED DIAGNOSES AND ICD-9 CODES**	a. ____________________ ☐☐☐.☐☐ b. ____________________ ☐☐☐.☐☐ c. ____________________ ☐☐☐.☐☐ d. ____________________ ☐☐☐.☐☐ e. ____________________ ☐☐☐.☐☐

SECTION J. HEALTH CONDITIONS

1.	**PROBLEM CONDITIONS**	(***Check all problems present in last 7 days** unless other time frame is indicated*)			
		INDICATORS OF FLUID STATUS		Dizziness/Vertigo	f. ☐
				Edema	g. ☐
		Weight gain or loss of 3 or more pounds within a 7 day period	a. ☐	Fever	h. ☐
				Hallucinations	i. ☐
				Internal bleeding	j. ☐
		Inability to lie flat due to shortness of breath	b. ☐	Recurrent lung aspirations in **last 90 days**	k. ☐
		Dehydrated; output exceeds input	c. ☐	Shortness of breath	l. ☐
				Syncope (fainting)	m. ☐
		Insufficient fluid; did **NOT** consume all/almost all liquids provided during **last 3 days**	d. ☐	Unsteady gait	n. ☐
				Vomiting	o. ☐
		OTHER		*NONE OF ABOVE*	p. ☐
		Delusions	e. ☐		

Resident ______________________________

2.	PAIN SYMPTOMS	(*Code the highest level of pain present in the last 7 days*) **a. FREQUENCY** with which resident complains or shows evidence of pain 0. No pain (***skip to J4***) 1. Pain less than daily 2. Pain daily		**b. INTENSITY** of pain 1. Mild pain 2. Moderate pain 3. Times when pain is horrible or excruciating	
3.	PAIN SITE	(*If pain present, **check all sites that apply in last 7 days***)			
		Back pain	a.	Incisional pain	f.
		Bone pain	b.	Joint pain (other than hip)	g.
		Chest pain while doing usual activities	c.	Soft tissue pain (e.g., lesion, muscle)	h.
		Headache	d.	Stomach pain	i.
		Hip pain	e.	Other	j.
4.	ACCIDENTS	(***Check all that apply***)			
		Fell in **past 30 days**	a.	Hip fracture in **last 180 days**	c.
		Fell in **past 31-180 days**	b.	Other fracture in **last 180 days**	d.
				NONE OF ABOVE	e.
5.	STABILITY OF CONDITIONS	Conditions/diseases make resident's cognitive, ADL, mood or behavior patterns unstable—(fluctuating, precarious, or deteriorating)			a.
		Resident experiencing an acute episode or a flare-up of a recurrent or chronic problem			b.
		End-stage disease, 6 or fewer months to live			c.
		NONE OF ABOVE			d.

SECTION K. ORAL/NUTRITIONAL STATUS

1.	ORAL PROBLEMS	Chewing problem			a.
		Swallowing problem			b.
		Mouth pain			c.
		NONE OF ABOVE			d.
2.	HEIGHT AND WEIGHT	*Record (a.) **height in inches** and (b.) **weight in pounds**. Base weight on most recent measure in **last 30 days**; measure weight consistently in accord with standard facility practice—e.g., in a.m. after voiding, before meal, with shoes off, and in nightclothes*	a. HT (in)		b. WT (lb)
3.	WEIGHT CHANGE	**a. Weight loss**—5 % or more in **last 30 days**; or 10 % or more in **last 180 days** 0. No 1. Yes			
		b. Weight gain—5 % or more in **last 30 days**; or 10 % or more in **last 180 days** 0. No 1. Yes			
4.	NUTRITIONAL PROBLEMS	Complains about the taste of many foods	a.	Leaves 25% or more of food uneaten at most meals	c.
		Regular or repetitive complaints of hunger	d.	*NONE OF ABOVE*	d.
5.	NUTRITIONAL APPROACHES	(***Check all that apply in last 7 days***)			
		Parenteral/IV	a.	Dietary supplement between meals	c.
		Feeding tube	b.	Plate guard, stabilized built-up utensil, etc.	g.
		Mechanically altered diet	c.	On a planned weight change program	h.
		Syringe (oral feeding)	d.		
		Therapeutic diet	e.	*NONE OF ABOVE*	i.
6.	PARENTERAL OR ENTERAL INTAKE	(***Skip to Section L if neither 5a nor 5b is checked***)			
		a. Code the proportion of **total calories** the resident received through parenteral or tube feedings in the **last 7 days** 0. None 1. 1% to 25% 2. 26% to 50% 3. 51% to 75% 4. 76% to 100%			
		b. Code the average **fluid intake** per day by IV or tube in **last 7 days** 0. None 1. 1 to 500 cc/day 2. 501 to 1000 cc/day 3. 1001 to 1500 cc/day 4. 1501 to 2000 cc/day 5. 2001 or more cc/day			

SECTION L. ORAL/DENTAL STATUS

1.	ORAL STATUS AND DISEASE PREVENTION	Debris (soft, easily movable substances) present in mouth prior to going to bed at night	a.
		Has dentures or removable bridge	b.
		Some/all natural teeth lost—does not have or does not use dentures (or partial plates)	a.
		Broken, loose, or carious teeth	d.
		Inflamed gums (gingiva); swollen or bleeding gums; oral abcesses; ulcers or rashes	e.
		Daily cleaning of teeth/dentures or daily mouth care—by resident or staff	f.
		NONE OF ABOVE	g.

Numeric Identifier ______________________________

SECTION M. SKIN CONDITION

1.	ULCERS (Due to any cause)	(*Record the number of ulcers at each ulcer stage—regardless of cause. If none present at a stage, record "0" (zero). Code all that apply during **last 7 days**. Code 9 = 9 or more.) **[Requires full body exam.]***	Number at Stage
		a. Stage 1. A persistent area of skin redness (without a break in the skin) that does not disappear when pressure is relieved	
		b. Stage 2. A partial thickness loss of skin layers that presents clinically as an abrasion, blister, or shallow crater	
		c. Stage 3. A full thickness of skin is lost, exposing the subcutaneous tissues - presents as a deep crater with or without undermining adjacent tissue.	
		d. Stage 4. A full thickness of skin and subcutaneous tissue is lost, exposing muscle or bone.	
2.	TYPE OF ULCER	(*For each type of ulcer, code for the highest stage in the **last 7 days** using scale in item M1—i.e., 0=none; stages 1, 2, 3, 4*)	
		a. Pressure ulcer—any lesion caused by pressure resulting in damage of underlying tissue	
		b. Stasis ulcer—open lesion caused by poor circulation in the lower extremities	
3.	HISTORY OF RESOLVED ULCERS	Resident had an ulcer that was resolved or cured in LAST 90 DAYS 0. No 1. Yes	
4.	OTHER SKIN PROBLEMS OR LESIONS PRESENT	(***Check all that apply during last 7 days***)	
		Abrasions, bruises	a.
		Burns (second or third degree)	b.
		Open lesions other than ulcers, rashes, cuts (e.g., cancer lesions)	c.
		Rashes—e.g., intertrigo, eczema, drug rash, heat rash, herpes zoster	d.
		Skin desensitized to pain or pressure	e.
		Skin tears or cuts (other than surgery)	f.
		Surgical wounds	g.
		NONE OF ABOVE	h.
5.	SKIN TREATMENTS	(***Check all that apply during last 7 days***)	
		Pressure relieving device(s) for chair	a.
		Pressure relieving device(s) for bed	b.
		Turning/repositioning program	c.
		Nutrition or hydration intervention to manage skin problems	d.
		Ulcer care	e.
		Surgical wound care	f.
		Application of dressings (with or without topical medications) other than to feet	g.
		Application of ointments/medications (other than to feet)	h.
		Other preventative or protective skin care (other than to feet)	i.
		NONE OF ABOVE	j.
6.	FOOT PROBLEMS AND CARE	(***Check all that apply during last 7 days***)	
		Resident has one or more foot problems—e.g., corns, callouses, bunions, hammer toes, overlapping toes, pain, structural problems	a.
		Infection of the foot—e.g., cellulitis, purulent drainage	b.
		Open lesions on the foot	c.
		Nails/calluses trimmed during **last 90 days**	d.
		Received preventative or protective foot care (e.g., used special shoes, inserts, pads, toe separators)	e.
		Application of dressings (with or without topical medications)	f.
		NONE OF ABOVE	g.

SECTION N. ACTIVITY PURSUIT PATTERNS

1.	TIME AWAKE	(***Check appropriate time periods over last 7 days***) Resident awake all or most of time (i.e., naps no more than one hour per time period) in the:			
		Morning	a.	Evening	c.
		Afternoon	b.	*NONE OF ABOVE*	d.
(If resident is comatose, skip to Section O)					
2.	AVERAGE TIME INVOLVED IN ACTIVITIES	**(When awake and not receiving treatments or ADL care)** 0. Most—more than 2/3 of time 1. Some—from 1/3 to 2/3 of time 2. Little—less than 1/3 of time 3. None			
3.	PREFERRED ACTIVITY SETTINGS	(***Check all settings in which activities are preferred***)			
		Own room	a.		
		Day/activity room	b.	Outside facility	d.
		Inside NH/off unit	b.	*NONE OF ABOVE*	e.
4.	GENERAL ACTIVITY PREFERENCES (adapted to resident's current abilities)	(***Check all PREFERENCES** whether or not activity is currently available to resident*)		Trips/shopping	g.
		Cards/other games	a.	Walking/wheeling outdoors	h.
		Crafts/arts	b.	Watching TV	i.
		Exercise/sports	c.	Gardening or plants	j.
		Music	d.	Talking or conversing	k.
		Reading/writing	e.	Helping others	l.
		Spiritual/religious activities	f.	*NONE OF ABOVE*	m.

5.	**PREFERS CHANGE IN DAILY ROUTINE**	*Code for resident preferences in daily routines* 0. No change 1. Slight change 2. Major change	
		a. Type of activities in which resident is currently involved	
		b. Extent of resident involvement in activities	

SECTION O. MEDICATIONS

1.	**NUMBER OF MEDICATIONS**	(***Record the number of different** medications used in the **last 7 days**; enter "0" if none used*)			
2.	**NEW MEDICATIONS**	(*Resident currently receiving medications that were initiated during the **last 90 days***) 0. No 1. Yes			
3.	**INJECTIONS**	(***Record the number of DAYS** injections of any type received during **the last 7 days**; enter "0" if none used*)			
4.	**DAYS RECEIVED THE FOLLOWING MEDICATION**	(***Record the number of DAYS** during **last 7 days**; enter "0" if not used. Note—enter "1" for long-acting meds used less than weekly*)			
		a. Antipsychotic		d. Hypnotic	
		b. Antianxiety		e. Diuretic	
		c. Antidepressant			

SECTION P. SPECIAL TREATMENTS AND PROCEDURES

1.	**SPECIAL TREATMENTS, PROCEDURES, AND PROGRAMS**	a. **SPECIAL CARE — *Check** treatments or programs received during **the last 14 days***			
		TREATMENTS		Ventilator or respirator	l.
		Chemotherapy	a.	**PROGRAMS**	
		Dialysis	b.	Alcohol/drug treatment program	m.
		IV medication	c.	Alzheimer's/dementia special care unit	n.
		Intake/output	d.	Hospice care	o.
		Monitoring acute medical condition	e.	Pediatric unit	p.
		Ostomy care	f.	Respite care	q.
		Oxygen therapy	g.	Training in skills required to return to the community (e.g., taking medications, house work, shopping, transportation, ADLs)	r.
		Radiation	h.		
		Suctioning	i.		
		Tracheostomy care	j.		
		Transfusions	k.	*NONE OF ABOVE*	s.

			DAYS (A)	MIN (B)
		b. THERAPIES - *Record the number of days and total minutes each of the following therapies was administered (for at least 15 minutes a day) in the **last 7 calendar days** (Enter 0 if none or less than 15 min. daily)* **[Note—count only post admission therapies]** (A) = # of days administered for **15 minutes or more** (B) = total # of minutes provided in **last 7 days**		
		a. Speech - language pathology and audiology services		
		b. Occupational therapy		
		c. Physical therapy		
		d. Respiratory therapy		
		e. Psychological therapy (by any licensed mental health professional)		

2.	**INTERVENTION PROGRAMS FOR MOOD, BEHAVIOR, COGNITIVE LOSS**	**(Check all interventions or strategies used in last 7 days** —no matter where received)	
		Special behavior symptom evaluation program	a.
		Evaluation by a licensed mental health specialist in **last 90 days**	b.
		Group therapy	c.
		Resident-specific deliberate changes in the environment to address mood/behavior patterns—e.g., providing bureau in which to rummage	d.
		Reorientation—e.g., cueing	e.
		NONE OF ABOVE	f.

3.	**NURSING REHABILITATION/ RESTORATIVE CARE**	*Record the NUMBER OF DAYS each of the following rehabilitation or restorative techniques or practices **was provided to the resident for more than or equal to 15 minutes per day in the last 7 days** (Enter 0 if none or less than 15 min. daily.)*			
		a. Range of motion (passive)		f. Walking	
		b. Range of motion (active)		g. Dressing or grooming	
		c. Splint or brace assistance		h. Eating or swallowing	
		TRAINING AND SKILL PRACTICE IN:		i. Amputation/prosthesis care	
		d. Bed mobility		j. Communication	
		e. Transfer		k. Other	

4.	**DEVICES AND RESTRAINTS**	(*Use the following codes for **last 7 days**:*) 0. Not used 1. Used less than daily 2. Used daily	
		Bed rails	
		a. — Full bed rails on all open sides of bed	
		b. — Other types of side rails used (e.g., half rail, one side)	
		c. Trunk restraint	
		d. Limb restraint	
		e. Chair prevents rising	
5.	**HOSPITAL STAY(S)**	Record number of times resident was admitted to hospital with an overnight stay **in last 90 days** (or since last assessment if less than 90 days). (*Enter 0 if no hospital admissions*)	
6.	**EMERGENCY ROOM (ER) VISIT(S)**	Record number of times resident visited ER without an overnight stay **in last 90 days** (or since last assessment if less than 90 days). (*Enter 0 if no ER visits*)	
7.	**PHYSICIAN VISITS**	In the **LAST 14 DAYS** (or since admission if less than 14 days in facility) how many days has the physician (or authorized assistant or practitioner) examined the resident? (*Enter 0 if none*)	
8.	**PHYSICIAN ORDERS**	In the **LAST 14 DAYS** (or since admission if less than 14 days in facility) how many days has the physician (or authorized assistant or practitioner) changed the resident's orders? *Do not include order renewals without change.* (*Enter 0 if none*)	
9.	**ABNORMAL LAB VALUES**	Has the resident had any abnormal lab values during the **last 90 days** (or since admission)? 0. No 1. Yes	

SECTION Q. DISCHARGE POTENTIAL AND OVERALL STATUS

1.	**DISCHARGE POTENTIAL**	a. Resident expresses/indicates preference to return to the community 0. No 1. Yes	
		b. Resident has a support person who is positive towards discharge 0. No 1. Yes	
		c. Stay projected to be of a short duration— discharge projected **within 90 days** (do not include expected discharge due to death) 0. No 2. Within 31-90 days 1. Within 30 days 3. Discharge status uncertain	
2.	**OVERALL CHANGE IN CARE NEEDS**	Resident's overall self sufficiency has changed significantly as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved—receives fewer supports, needs less restrictive level of care 2. Deteriorated—receives more support	

SECTION R. ASSESSMENT INFORMATION

1.	**PARTICIPATION IN ASSESSMENT**	a. Resident:	0. No	1. Yes		
		b. Family:	0. No	1. Yes	2. No family	
		c. Significant other:	0. No	1. Yes	2. None	

2. **SIGNATURES OF PERSONS COMPLETING THE ASSESSMENT:**

a. Signature of RN Assessment Coordinator (sign on above line)

b. Date RN Assessment Coordinator signed as complete ☐☐ – ☐☐ – ☐☐☐☐

Month Day Year

Resident ____________________ Numeric Identifier ____________________

SECTION T. THERAPY SUPPLEMENT FOR MEDICARE PPS

1.	SPECIAL TREAT-MENTS AND PROCE-DURES	a. **RECREATION THERAPY** —*Enter number of days and total minutes of recreation therapy administered (**for at least 15 minutes a day**) in the **last 7 days** (Enter 0 if none)* (A) = **# of days** administered for 15 minutes or more (B) = **total # of minutes** provided in last 7 days	**DAYS (A)** ☐ **MIN (B)** ☐☐☐☐
		Skip unless this is a Medicare 5 day or Medicare readmission/ return assessment.	
		b. **ORDERED THERAPIES** —*Has physician ordered any of following therapies to begin in FIRST 14 days of stay—physical therapy, occupational therapy, or speech pathology service?* 0. No 1. Yes	☐
		If not ordered, skip to item 2	
		c. Through day 15, provide an estimate of the number of days when at least 1 therapy service can be expected to have been delivered.	☐☐
		d. Through day 15, provide an estimate of the number of therapy minutes (across the therapies) that can be expected to be delivered?	☐☐☐☐
2.	WALKING WHEN MOST SELF SUFFICIENT	***Complete item 2 if ADL self-performance score for TRANSFER (G.1.b.A) is 0,1,2, or 3 AND at least one of the following are present:*** • Resident received physical therapy involving gait training (P.1.b.c) • Physical therapy was ordered for the resident involving gait training (T.1.b) • Resident received nursing rehabilitation for walking (P.3.f) • Physical therapy involving walking has been discontinued within the past 180 days	
		Skip to item 3 if resident did not walk in last 7 days	
		(FOR FOLLOWING FIVE ITEMS, BASE CODING ON THE EPISODE WHEN THE RESIDENT WALKED THE FARTHEST WITHOUT SITTING DOWN. INCLUDE WALKING DURING REHABILITATION SESSIONS.)	
		a. **Furthest distance walked** without sitting down during this episode. 0. 150+ feet 1. 51-149 feet 2. 26-50 feet 3. 10-25 feet 4. Less than 10 feet	☐
		b. **Time walked** without sitting down during this episode. 0. 1-2 minutes 1. 3-4 minutes 2. 5-10 minutes 3. 11-15 minutes 4. 16-30 minutes 5. 31+ minutes	☐
		c. **Self-Performance in walking** during this episode. 0. *INDEPENDENT*—No help or oversight 1. *SUPERVISION*—Oversight, encouragement or cueing provided 2. *LIMITED ASSISTANCE*—Resident highly involved in walking; received physical help in guided maneuvering of limbs or other nonweight bearing assistance 3. *EXTENSIVE ASSISTANCE*—Resident received weight bearing assistance while walking	☐
		d. **Walking support provided** associated with this episode (code regardless of resident's self-performance classification). 0. No setup or physical help from staff 1. Setup help only 2. One person physical assist 3. Two+ persons physical assist	☐
		e. **Parallel bars** used by resident in association with this episode. 0. No 1. Yes	☐
3.	CASE MIX GROUP	**Medicare** ☐☐☐☐☐ **State** ☐☐☐☐☐	

SECTION V. RESIDENT ASSESSMENT PROTOCOL SUMMARY

Numeric Identifier ____________________

Resident's Name:	Medical Record No.:

1. Check if RAP is triggered.
2. For each triggered RAP, use the RAP guidelines to identify areas needing further assessment. Document relevant assessment information regarding the resident's status.
   - Describe:
     — Nature of the condition (may include presence or lack of objective data and subjective complaints).
     — Complications and risk factors that affect your decision to proceed to care planning.
     — Factors that must be considered in developing individualized care plan interventions.
     — Need for referrals/further evaluation by appropriate health professionals.
   - Documentation should support your decision-making regarding whether to proceed with a care plan for a triggered RAP and the type(s) of care plan interventions that are appropriate for a particular resident.
   - Documentation may appear anywhere in the clinical record (e.g., progress notes, consults, flowsheets, etc.).
3. Indicate under the Location of RAP Assessment Documentation column where information related to the RAP assessment can be found.
4. For each triggered RAP, indicate whether a new care plan, care plan revision, or continuation of current care plan is necessary to address the problem(s) identified in your assessment. The Care Planning Decision column must be completed within 7 days of completing the RAI (MDS and RAPs).

A. RAP PROBLEM AREA	**(a) Check if triggered**	**Location and Date of RAP Assessment Documentation**	**(b) Care Planning Decision—check if addressed in care plan**
1. DELIRIUM	☐		☐
2. COGNITIVE LOSS	☐		☐
3. VISUAL FUNCTION	☐		☐
4. COMMUNICATION	☐		☐
5. ADL FUNCTIONAL/ REHABILITATION POTENTIAL	☐		☐
6. URINARY INCONTINENCE AND INDWELLING CATHETER	☐		☐
7. PSYCHOSOCIAL WELL-BEING	☐		☐
8. MOOD STATE	☐		☐
9. BEHAVIORAL SYMPTOMS	☐		☐
10. ACTIVITIES	☐		☐
11. FALLS	☐		☐
12. NUTRITIONAL STATUS	☐		☐
13. FEEDING TUBES	☐		☐
14. DEHYDRATION/FLUID MAINTENANCE	☐		☐
15. DENTAL CARE	☐		☐
16. PRESSURE ULCERS	☐		☐
17. PSYCHOTROPIC DRUG USE	☐		☐
18. PHYSICAL RESTRAINTS	☐		☐

B. ____

1. Signature of RN Coordinator for RAP Assessment Process

2. ☐☐ — ☐☐ — ☐☐☐☐
Month Day Year

____

3. Signature of Person Completing Care Planning Decision

4. ☐☐ — ☐☐ — ☐☐☐☐
Month Day Year

APPENDIX C

UNIVERSAL NEEDS ASSESSMENT INSTRUMENT (UNAI)

Assessment of Needs for Continuing Care

Department of Health and Human Services
Health Care Financing Administration

I. SOCIODEMOGRAPHICS

A. Name: ____________________
First *MI* *Last*

B. Permanent address:
____
No. *Street* *City, Town* *State* *ZIP*

C. Phone No.: (☐☐☐)☐☐☐–☐☐☐☐

D. Birthdate: ☐☐ Mo ☐☐ Day ☐☐☐☐ Year

E. Gender: ☐ Male ☐ Female

F. Social Security No. ☐☐☐–☐☐–☐☐☐☐

G. Medicare Number ☐☐☐☐☐☐☐☐☐☐☐☐

H. Medicaid Number ☐☐☐☐☐☐☐☐☐☐☐☐☐☐

I. Medical Record No. ☐☐☐☐☐☐☐☐☐☐☐☐

J. Current marital status: ☐ Never married ☐ Married ☐ Widowed ☐ Separated ☐ Divorced

K. Religion: ☐ Catholic ☐ Jewish ☐ Protestant ☐ Other *(specify)* ____________

L. Date of admission: ☐☐ Mo ☐☐ Day ☐☐☐☐ Year

M. Race/ethnicity:
- ☐ American Indian/Alaskan Native
- ☐ Asian or Pacific Islander
- ☐ White, not of Hispanic origin
- ☐ Black, not of Hispanic origin
- ☐ Hispanic
- ☐ Other *(specify)* ____________

N. Education:
(highest level completed)
- ☐ No schooling
- ☐ 8th grade/less
- ☐ 9–11 grades
- ☐ High school
- ☐ Technical/trade school
- ☐ Some college
- ☐ Bachelor's degree
- ☐ Graduate degree

O. Employment outside home:
- ☐ Paid, full-time
- ☐ Paid, part-time
- ☐ Non-paid/volunteer
- ☐ Unemployed, seeking employment
- ☐ Unemployed, not seeking employment

P. Health care coverage:
(Check all that apply)
- Medicare: ☐ Part A ☐ Part B ☐ Medigap
- ☐ Medicaid
- ☐ VA
- ☐ Workers' Compensation
- ☐ CHAMPUS/CHAMPVA
- ☐ Private insurer *(specify)* ____________
- ☐ Self-pay, out of pocket
- ☐ No insurance, no ability to pay

Q. Primary language: ☐ English ☐ Other *(specify)* ____________

COMMENTS: ____________________

____

____

____

____

____

II. HEALTH STATUS

A1. Reason for admission *(Admitting diagnosis, enter and specify ICD-9-CM code).*

ICD-9-CM code ☐☐☐☐.☐☐
ICD-9-CM code ☐☐☐☐.☐☐
ICD-9-CM code ☐☐☐☐.☐☐

A2. Admission code: *(Check all that apply)*
- ☐ Surgery
- ☐ Treatment
- ☐ Evaluation
- ☐ Rehabilitation
- ☐ Long-term residential care
- ☐ Respite care
- ☐ Hospice care

B. Primary and secondary diseases/conditions most related to current treatment plan:

____

____

C. Surgical procedures during stay:

____

____

D. Health problems that may affect post-discharge care needs: *(Check all that apply)*

Diseases

HEART/CIRCULATION
- ☐ Cardiac dysrhythmias
- ☐ Arteriosclerotic heart disease (ASHD)
- ☐ Congestive heart failure
- ☐ Other heart disease *(specify)* ____________
- ☐ None of above

NEUROLOGICAL
- ☐ CVA
- ☐ Head injury
- ☐ Alzheimer's
- ☐ Other dementias
- ☐ Parkinson's
- ☐ Other neurodegenerative disease *(specify)* ____________
- ☐ None of above

PSYCHIATRIC/MOOD
- ☐ Schizophrenia
- ☐ Depression
- ☐ Anxiety disorder
- ☐ MR/DD
- ☐ Other psychiatric disorder *(specify)* ____________
- ☐ None of above

OTHER
- ☐ Cancer
  - Stage ____________
  - Site ____________
- ☐ Renal disease
- ☐ Lung disease
- ☐ Diabetes
- ☐ Arthritis
- ☐ Infections *(specify)* ____________
- ☐ Other *(specify)* ____________
- ☐ None of above

Conditions *(Check all that apply)*

☐ Chronic pain
☐ Pain symptoms daily or more frequently
☐ Skin desensitized to pain
☐ Falls in last 180 days
☐ Unsteadiness of gait
☐ Substance misuse *(specify)*____________________
☐ Contractures
☐ Amputations
☐ Pressure ulcers
☐ Balance problem — standing
☐ Balance problem — sitting
☐ None of above

COMPLIANCE

☐ Nonadherence to therapeutic regimen
☐ Refuses treatments (e.g., medications)
☐ Other *(specify)* ____________________
☐ Resists care
☐ None of above

E. Level of consciousness:

☐ Alert (awake, responsive)
☐ Semiconscious (lethargic, drowsy, obtunded, or stuporous)
☐ Comatose (unresponsive, persistent vegetative state)

F. Check those cognitive/behavioral factors that may affect post-discharge care needs

(During last 24 hours—check all that apply)

Short-term memory OK — *seems/appears to recall after 5 minutes*

☐ Memory OK ☐ Memory problem

Long-term memory OK — *seems/appears to recall long past*

☐ Memory OK ☐ Memory problem

Judgment *(During last 24 hours, how patient made decisions about basic activities and how followed instructions)*

☐ Independent – decisions consistent/reasonable
☐ Modified independence – some difficulty in new situations only
☐ Moderately impaired – decisions poor; cues/supervision required
☐ Severely impaired – never/rarely made decision

Mood/Behavioral Indicators *(During last 24 hours—check all that apply)*

☐ Indicators of mood distress (depressed; appears sad, helpless, hopeless; has difficulty with concentration, sleep, and/or appetite)
☐ Suicidal (attempts; verbalizes thoughts/plan)
☐ Wandering (does not understand territorial constraints, leading to unsafe situations)
☐ Agitation (anxiety; restlessness; fidgeting)
☐ Unusual (socially inappropriate) behavior (inappropriate verbalization; reclusiveness; hoarding; self-abusive acts; sexual behavior in public; resists care)
☐ Delusions (thoughts of persecution, paranoia, or grandiosity)
☐ Hallucinations (perceives what does not exist)
☐ Physically assaultive (strikes self or other, causing dangerous condition)
☐ None of above

COMMENTS: ____

III. FUNCTIONAL STATUS AT DISCHARGE

Rate performance in prior 24 hours. Base rating on observation of patient and discussions with patient and care staff.

A. Codes to be used with each ADL:

0. **INDEPENDENT** — No help or oversight
1. **SUPERVISION** — Only oversight, encouragement or cueing during last 24 hours
2. **LIMITED ASSISTANCE** — Patient highly involved in activity. Received physical help in guided maneuvering of limbs or other nonweight bearing assistance
3. **EXTENSIVE ASSISTANCE** — While patient performed part of activity, over last 24 hours, help of following type(s) was also provided one or more times:
   - — Weight-bearing support
   - — Full performance by others during part (but not all) of activity
4. **TOTAL DEPENDENCE** — Full performance of activity by others during last 24 hours

8. **ACTIVITY DID NOT OCCUR** during past 24 hours (code NOT TO BE USED for Eating and Toilet Use)

Definitions for each activity of daily living:

TRANSFER (how patient moves between surfaces — to/from: bed, chair, wheelchair, standing position. EXCLUDE to/from bath/toilet)	
LOCOMOTION AROUND ROOM AND ADJACENT HALLWAY (how patient moves between locations in his/her room and adjacent hallway on same floor)	
DRESSING (how patient puts on, fastens, and takes off all items of street clothing, including donning/removing prosthesis)	
TOILET USE (how patient uses the toilet room (or commode, bedpan, urinal); transfers on/off toilet, cleanses, changes pad, manages ostomy or catheter, adjusts clothes)	
EATING (how patient eats and drinks; includes act of bringing food to mouth, chewing and swallowing. If tubefed, level of self-sufficiency)	
BATHING (how patient managed last bath prior to discharge — how patient takes full-body bath/shower, sponge bath, and transfers in/out of tub/shower. EXCLUDE washing of back and hair)	

A1. Locomotion mode/device:

0. **Not used / not done**
1. **Some of the time**
2. **All of the time**

MODES OF LOCOMOTION:	
Walked without physical help (person or devices)	
Walked with physical help	
Wheeled self	
Other person wheeled	
NONE OF ABOVE (e.g., bed-bound or stationary chair-bound)	
DEVICES USED IN LOCOMOTION:	
Cane, walker, crutch	
Wheelchair	
Brace, prosthesis	
Other *(specify)*____________________	

A2. Continence in Last 48 Hours:

0. **Complete control**
1. **Incontinent less than daily**
2. **Incontinent daily**
3. **Incontinent – multiple daily episodes**
4. **No elimination during 48 hours**

BLADDER CONTINENCE (control of urinary bladder function (if dribbles, volume insufficient to soak through underpants), with appliances (e.g., foley) or continence programs, if employed)	
BOWEL CONTINENCE (control of bowel movement, with appliance or bowel continence programs, if employed)	

B. Instrumental activities of daily living in last 7 days
(complete only if patient is now in community residence)

0. Independent
1. Limited assistance provided some of the time (but patient does some of activity)
2. Extensive assistance all of the time (but patient does some of activity)
3. Total dependence
4. Activity did not occur
5. Unable to determine

MEAL PREPARATION (includes cooking food and setting up meal)	
MEDICATION ADMINISTRATION (handling pills, ointments, injections, eyedrops, suppositories, remembering schedule and dose)	
TELEPHONE USE (dialing, receiving and making phone calls)	
LIGHT HOUSEKEEPING (doing dishes, laundry, vacuuming, taking out trash)	
SHOPPING (selecting, carrying, paying for items)	
HANDLING FINANCES (balancing checkbooks, writing checks, paying bills)	
TRANSPORTATION USE (use of public or private transportation)	

C. Communication (during last 24 hours)

Comprehension

(Ability to understand auditory or visual communication)

- ☐ Understands
- ☐ Usually understands direct messages with minimal prompting, repetition
- ☐ Sometimes understands but has difficulty following directions, needs constant prompting
- ☐ Rarely or never understands, unable to follow simple directions

Expression

(Ability to communicate basic and more complex daily needs)

- ☐ Expresses needs clearly, understood
- ☐ Expresses needs slowly, usually understood
- ☐ Expresses needs with difficulty (limited to basic needs only); sometimes understood; needs much prompting
- ☐ Unable to express needs, rarely understood

Usual Mode(s) of Communication

- ☐ Speech
- ☐ Writing
- ☐ American sign language
- ☐ Signs, gestures, sounds
- ☐ Communication device
- ☐ None of above

Assistive Devices Currently in Use *(check all that apply)*

- ☐ Glasses
- ☐ Dentures
- ☐ Hearing aid
- ☐ Other *(specify)*________________
- ☐ None of above

D. List physical or health restrictions that affect patient's ability to perform ADL or IADL functions:

Describe in space provided below and check appropriate boxes that follow.

- ☐ Activity restriction order (bedrest, chairrest, distance restrictions in walking, restrictions on lifting)
- ☐ Nausea, vomiting, diarrhea
- ☐ Dizziness, vertigo
- ☐ Pain
- ☐ Delirium (acute confusional state)
- ☐ Other *(specify)*________________
- ☐ None of above

COMMENTS:

IV. Environmental Factors

A. Living Arrangement

Use the following codes:

1. Private home/private apartment
2. Rented room
3. Housing with formal supportive or protective services
4. Homeless shelter
5. Psychiatric facility
6. Nursing facility
7. Other *(specify)*________________

Pre-admission usual living arrangement	
Discharge site	
Expected permanent residence	

B. Living with:

Use the following codes:

1. Alone
2. Spouse
3. Other family
4. Others *(specify)*________________

Pre-admission usual living arrangement	
Discharge site	
Expected permanent residence	

C. Environmental Barriers in Permanent Residence:

Use codes: 0 = No, 1 = Yes

Are there barriers to building entry/exit?	
Are there internal barriers that restrict independent movement (stairs, narrow doorway)?	
Is toilet/tub/shower accessible?	
Is there adequate heating/cooling?	
Is the patient able to access emergency assistance (e.g., phone/emergency button that patient is capable of using is present)?	
Other *(specify)* ________________	

COMMENTS:

V. Nursing and Other Care Requirements

Check anticipated needs for continuing care.

A. Therapeutic Needs:

1. ***Skin:*** Pressure ulcer *(This requires a full body check by staff caregiver and input from person who has completed this check):*

0. **No pressure ulcer**
1. **Stage 1:** A persistent area of redness (without a break in the skin) that does not disappear when pressure is relieved
2. **Stage 2:** A partial thickness loss of skin layers that presents clinically as an abrasion, blister, or shallow crater
3. **Stage 3:** A full thickness of skin is lost, exposing the subcutaneous tissues–presents as a deep crater with or without undermining adjacent tissue
4. **Stage 4:** A full thickness of skin and subcutaneous tissue is lost, exposing muscle and/or bone

Highest Stage (any site)	

Codes for Sites:

1. Elbows (L or R)
2. Hip (L or R)
3. Sacrum
4. Coccyx
5. Buttocks (L or R)
6. Ankles (L or R)
7. Heels (L or R)
8. Other *(specify)* ____________

Site	
Site	
Site	

Pressure Ulcer Care *(Check all that apply):*

☐ Antibiotics, systemic
☐ Dressing
☐ Pressure reduction/relief device–bed or chair
☐ Nutrition
☐ Other *(specify)* ____________
☐ None of above
☐ Antibiotics, topical
☐ Turning/repositioning
☐ Debridement

Skin: Wounds

Check for type of wound:

☐ No wound
☐ Stasis ulcer
☐ Surgical wound
☐ Cut
☐ Burn
☐ Other *(specify)* ____________

Care Schedule: ____________

____

____

____

2. **Nutrition** – Therapeutic Diet – Type of Diet *(Check all that apply)*

☐ Clear liquid
☐ Full liquid diet
☐ Pureed diet
☐ Mechanical soft diet
☐ Soft diet
☐ Diabetes Mellitus diet
☐ Weight reduction/calorie controlled diet
☐ High caloric diet
☐ High fiber diet
☐ Low cholesterol/low saturated fat diet
☐ Fat restricted diet
☐ Sodium-controlled diet
☐ Other *(specify)* ____________
☐ None of above

Tube feeding	

Frequency Codes for Tube Feeding:

0. Not used
1. Tube for parenteral access present, but no feeding
2. Less than daily
3. Daily
4. Multiple times per day
5. Continuous

Parenteral *(Check route and code frequency):*

Peripheral ☐
Central ☐

Nasogastric	
Gastrostomy	
Jejunostomy	

Frequency Codes for Hydration and Respiratory Treatments:

0. None
1. Less than daily
2. Daily
3. Multiple times per day
4. Continuous

3. **Hydration**

Encourage oral fluids	
Restrict oral fluids	
Intravenous hydration *(Check route and code frequency):* ☐ Peripheral ☐ Central	

4. **Respiratory** *(Check type and code frequency):*

Oxygen:	☐ Continuous ☐ Intermittent	
Suctioning		
Tracheostomy:	☐ Temporary ☐ Permanent	
Ventilator:	☐ Temporary ☐ Permanent	

5. **Elimination** *(Check type and, where indicated, code frequency)*

Urinary Catheter

☐ Intermittent catheter

☐ Indwelling

Date of last insertion:

☐☐ month ☐☐ day ☐☐☐☐ year

☐ Continuous Irrigation ☐ Intermittent Irrigation

☐ External collecting device

Enemas or other bowel management	

Ostomy

☐ Urine

☐ Stool

Dialysis

Frequency Code:

0. None
1. Once a week
2. Multiple times weekly

☐ Hemo

☐ Peritoneal

☐ CAPD

6. **Number of medications (includes prescriptions and over-the-counter meds patient takes on a regular basis)** ☐☐

Frequency Codes: for #7–#10
0. None
1. Less than daily
2. Daily
3. Multiple times per day
4. Continuous

7. **Administration/Management of Medications**

Oral	
Intravenous	
Subcutaneous/intramuscular	
Implanted pump	
Antibiotics	
Chemotherapy	
Blood products	
Other *(specify)* ______	

8. **Skilled Nursing Observation** *(specify)* ______

Frequency	

9. **Supervision/Evaluation** *(specify)* ______

Frequency	

10. **Other Care Needs** *(specify)* ______

Frequency	

B. Patient/Family Educational Needs

Code Needs:
0. None
1. Evaluation
2. Training in purpose
3. Training in performance
4. Counseling
5. Other *(specify)* ______

Self-care activities (ADLs, decision-making)	
Self-management of illness (including family management of patient's illness)	
Diet instruction	
Medication administration	
Ostomy care	
Wound care/dressing change	
Tracheostomy care/suctioning	
Other *(specify)* ______	

COMMENTS: ______

VI. Family and Community Support

A. SOURCES OF SUPPORT

PRIMARY:

1. **Name:** ______ *First* *MI* *Last*

2. **Permanent address:** ______

No. *Street* *City, Town* *State* *ZIP*

3. **Phone No.:** (☐☐☐) ☐☐☐ – ☐☐☐☐

Other Caregiver Information:

Relationship Codes:
1. Spouse
2. Child
3. Child's spouse
4. Sibling
5. Other relative
6. Friend/neighbor
7. Formal agency person
8. Other

Type of Support Codes:
1. Unwilling to help
2. Limited time—some tasks
3. Limited time—most/all tasks
4. Unlimited time—some tasks
5. Unlimited time—most tasks
6. No need for help in this area

Caregiver Limitation/Constraint Codes: 1. Physically restricted 2. Cognitively restricted

Type of Support This Caregiver Will Provide *(List primary first)*

Relationship	Type of Support				Limitation/ Constraints
	Physical	Emotional	Social Activities	Economic	

B. Community Services Utilized Prior to Admission: *(Check all that apply; enter name of agency or service professional)*

☐ Home Health Services ______
☐ Homemaker Services ______
☐ Equipment/Supplies ______
☐ Meals to homebound ______
☐ Transportation ______
☐ Adult Day Care ______
☐ Mental Health Services ______
☐ Hospice ______
☐ Respite ______
☐ Case Management ______
☐ Other *(specify)* ______

C. Assistance Needed for Home Care:

☐ No

☐ Yes *(specify)* ______________________________

____

Sources of additional home care *(Check all that apply)*

☐ Family sufficient

☐ Agency sufficient

☐ Neither sufficient

D. PHYSICIAN RESPONSIBLE FOR FOLLOW-UP CARE:

1. **Name:** ______________________________
First *MI* *Last*

2. **Business address:**
____
No. *Street* *City, Town* *State* *ZIP*
____

3. **Phone No.:** (☐☐☐) ☐☐☐ – ☐☐☐☐

E. OTHER INDIVIDUAL RESPONSIBLE FOR COORDINATING CARE:

1. **Name:** ______________________________
First *MI* *Last*

2. **Business address:**
____
No. *Street* *City, Town* *State* *ZIP*
____

3. **Phone No.:** (☐☐☐) ☐☐☐ – ☐☐☐☐

COMMENTS:

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VII. Patient/Family Goals and Preferences

A. Patient's Goals and Preferences *(Check one)*

☐ Return, remain in home

☐ Return, remain in a residential setting with supportive services

☐ Enter, remain in a rehabilitation facility

☐ Enter or return to a (long-stay) nursing home

☐ Enter a hospice program

☐ None of above

B. Family/Caregiver's Goals and Preferences for Patient
(Check one)

☐ Return, remain in home

☐ Return, remain in a residential setting with supportive services

☐ Enter, remain in a rehabilitation facility

☐ Enter or return to a nursing home

☐ Enter a hospice program

☐ None of above

C. Religious or Ethnic Practices That May Affect Needs o Preferences for Continuing Care *(Check all that apply)*

☐ 1. Dietary restrictions

☐ 2. Restrictions on medication use

☐ 3. Restrictions on other treatments

☐ 4. Preference for religious-based treatments

☐ 5. None of above

D. Decision-Making Support *(Check all that apply)*

Durable power of attorney for health care decision-making

☐ Already has

☐ Desires/requires

Living will

☐ Already has

☐ Desires/requires

Guardian/Conservator

☐ Already has

☐ Desires/requires

☐ None of above

E. Surrogate Decision-Maker

1. **Name:** ______________________________
First *MI* *Last*

2. **Permanent address:**
____
No. *Street* *City, Town* *State* *ZIP*

3. **Phone No.:** (☐☐☐) ☐☐☐ – ☐☐☐☐

(Check all that apply)

☐ Is this person the patient's legal guardian?

☐ Does this person have durable power of attorney for health care for patient?

☐ Does this person have durable power of attorney for patient's financially related matters?

☐ Is this person the key family member responsible for the patient?

☐ None of above

VIII. Needs for Continuing Care

A. Therapy/Service Needs: *(Check all that apply)*

- ☐ Nursing
- ☐ Physical therapy
- ☐ Occupational therapy
- ☐ Speech therapy
- ☐ Respiratory therapy
- ☐ Social work
- ☐ Mental health
- ☐ Chemotherapy
- ☐ Dialysis
- ☐ Oxygen therapy
- ☐ Radiation therapy
- ☐ Transfusions
- ☐ Ventilator or respirator
- ☐ Alcohol/drug treatment program
- ☐ Hospice care
- ☐ Respite care
- ☐ Other *(specify)* ____________
- ☐ None of above

B. Durable Medical Equipment/Supply Needs
(Check all that apply)

- ☐ Bed
- ☐ Siderails
- ☐ Trapeze
- ☐ Commode
- ☐ Walker
- ☐ Wheelchair
- ☐ Oxygen
- ☐ Disposable supplies *(specify)* ____________
- ☐ Cane
- ☐ Hearing aid
- ☐ Eyeglasses
- ☐ Braces, other prostheses
- ☐ Other *(specify)* ____________
- ☐ None of above

C. The following options are consistent with the patient's needs:

- ☐ Home (no additional services are necessary)
- ☐ Relative's home (no additional services are necessary)

Home (own or relative's) with Home Care Services *(Check all that apply)*

- ☐ IADL care
- ☐ ADL care
- ☐ Nursing therapeutic care
- ☐ Other therapeutic care

- ☐ Board and care/personal care facility/retirement home
- ☐ Rehabilitation facility/sub-acute care unit
- ☐ Hospice
- ☐ Outpatient *(specify)* ____________
- ☐ Adult day care

Community Services Required *(Check all that apply)*

- ☐ IADL care
- ☐ ADL care
- ☐ Nursing care
- ☐ Other therapeutic care ____________

Nursing Facility *(Check all that apply)*

- ☐ Alzheimer's/dementia special care unit
- ☐ Long-term care
- ☐ Head or trauma unit
- ☐ Other *(specify)* ____________

D. Needs/Options have been discussed with:

- ☐ Patient
- ☐ Family representative
- ☐ Significant other
- ☐ Not discussed

COMMENTS:

Discharge Planner/Coordinator's Signature: ____________

Date: ____________

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APPENDIX D

ANNOTATED BIBLIOGRAPHY ON STANDARDS OF CARE

Citation: Abraham, Ivo L., Lillian J. Currie, Jane Bryant Neese, Eun Suk Yi, and Anita A. Thompson-Heisterman. "Risk Profiles of Nursing Home Placement of Rural Elderly: A Cluster Analysis of Psychogeriatric Indicators." *Archives of Psychiatric Nursing*, vol. 8, no. 4, August 1994, pp. 262-271.

Objective: To assess whether it is possible to identify subpopulations of patients by means of critical psychogeriatric indicators such as the ability to perform activities of daily living (ADLs), pain, and cognition.

Methods: Cluster analysis of 92 patients enrolled in the Rural Elder Outreach Program (rural counties in central Virginia). At the time of initial assessment and intake into the program, a variety of functional status measures were collected, including: (1)Older American Resources and Services (OARS) Multidimensional Functional Assessment Questionnaire, (2) Medical Outcomes Study (MOS) Short-Form General Health Survey (for physical ability, pain assessment, physical health, mental health, role performance, and social functioning), (3) Hamilton Rating Scale for Depression, (4) Mini-Mental State Exam, and (5) Psychogeriatric Nursing Assessment Protocol (PNAP)–Geriatric Behavioral Assessment.

Results: Most subjects had only minor impairments in physical activities of daily living (ADL) abilities, however, they had a high level of instrumental activities of daily living (IADL) impairment. Overall, clients had a high level of physical disability and moderate levels of pain. Clients were moderately depressed and slightly cognitively impaired. Clients' self-reported physical health status was poor, but they reported their mental health status as good. However, they complained of poor role performance and social functioning.

The functional and clinical indicators were entered into a cluster analysis that yielded a three-cluster solution. Cluster I comprised 50 percent of the sample and were characterized as having very poor health, mild cognitive impairment, and very high care demands. This group was judged to be at moderate risk of nursing home placement; they were migrating toward high risk. Cluster II comprised 38 percent of the sample and were characterized as having poor health, good mental health and cognition, and high care demands. Although this group was judged to be at lower risk for nursing home placement, their poor health was a critical variable and it was thought that many were "one serious illness away from institutionalization." Cluster III comprised 12 percent of the sample. They showed high levels of functional and cognitive impairment as well as intensive care demands and poor judgment. This group was at the highest risk of nursing home placement and required intensive, substitutive care to maintain them in their homes.

Conclusions: The authors stated that this analysis made them more sensitive to key psychogeriatric indicators of risk. It enabled them to target services more readily in the early stages of their contact with their clients. This study highlights the importance of factors other than clinical diagnoses in determining the needs of the elderly for institutional placement.

Citation: Blaum, Caroline, Evelyn O'Neill, Karen Clements, et al. "Validity of the Minimum Data Set for Assessing Nutritional Status in Nursing Home Residents." *American Journal of Clinical Nutrition,* vol. 66, 1997, pp. 787-94.

Objective: To assess the relationship of Minimum Data Set (MDS) clinical variables to measures of low and high nutritional risk among nursing home residents.

Methods: An observational cross-section study of 186 residents from a large Boston long-term care facility. MDS responses related to nutritional status were considered to be those items related to eating characteristics (dentition, chewing and swallowing, oral intake), functional characteristics (ADLs), cognitive and behavioral performance, affective status, and chronic and subacute conditions. For each resident in the sample, anthropometric measures, such as body weight, height, knee height, triceps skinfold thickness, midarm circumference, and bioelectrical impedance were obtained as well. Chi-square and logistic regression analyses were used to assess the association between MDS and anthropometric measures of nutritional status.

Results: Correlations between MDS and anthropometric measures were relatively high and statistically significant. For men, correlations were lower and less likely to be significant. MDS items for intake, advanced cognitive impairment, and pressure ulcer were strongly and significantly associated with anthropometric measures of nutrition below the 25th percentile.

Conclusions: Some nutritionally related and dependency variables constructed from MDS responses were significantly associated with anthropometric measures of nutritional status in nursing home residents. The MDS (and the Resident Assessment Instrument of which it is a part) may be useful in identifying residents exhibiting undernutrition. It may be useful as well in evaluating interventions to improve nutritional status of nursing home residents.

Citation: Brandeis, Gary H., Dan R. Berlowitz, Monir Hossain, and John N. Morris. "Pressure Ulcers: The Minimum Data Set and the Resident Assessment Protocol." *Advances in Wound Care*, vol. 8, no. 6, November/December 1995, pp. 18-25.

Objective: To determine whether the Resident Assessment Protocol (RAP) triggers for pressure ulcers in the Minimum Data Set (MDS) are actually associated with pressure ulcers. Apparently, many of the pressure ulcer triggers had been originally included in the MDS on the basis of expert opinion. This study also described prevalence and incidence of pressure ulcers and nursing home management practices.

Methods: Data came from Health Care Financing Administration's (HCFA) evaluation of the MDS. MDS data were collected on 2,011 patients in 270 nursing homes in 10 states. A logistic regression model was constructed in which the outcome variable was the presence of a Stage II-IV pressure ulcer at the start of the study, and the independent variables were the pressure ulcer RAP triggers. The triggers included items from such areas as functional deficits, diagnoses, previous ulcer, medication use, and use of restraints.

Results: Two hundred twenty-four of the 2,011 patients (11.2 percent) had a Stage II-IV pressure ulcer at the beginning of the study. Of the 1,663 residents without an ulcer at the beginning, 1,322 were still in the nursing homes at a six-month followup; of these, 82 (6.2 percent) had developed a stage II-IV ulcer.

In the regression model, only five factors were significantly associated with the presence of an ulcer at the start of the study: being bedfast (OR=2.3), dependence in transferring (OR=2.0), dependence in mobility (OR=2.0), history of previous ulcer (OR=1.9), and a diagnosis of diabetes (OR=1.6). Very few patients had missing data on either dependent or independent variables.

Most of the 224 patients with pressure ulcers were receiving skin care interventions, such as repositioning (79 percent), protective/preventive skin care (73 percent), and a pressure-relieving bed (73 percent). Even many of the patients without pressure ulcers were also receiving skin care interventions: repositioning (36 percent), protective/preventive skin care (55 percent), and a pressure-relieving bed (43 percent). The authors then found use of skin care interventions (both use of any intervention and number of interventions) increased with increasing number of the risk factors identified in their model.

Conclusions: The authors suggest that the number of pressure ulcer RAP triggers could be reduced from 14 factors to the 5 factors identified in their regression model but acknowledge the cross-sectional nature of this study and that further prospective studies are needed. The authors also note that the high rate of skin care interventions, particularly among patients identified as high-risk by their model, is reassuring.

For the purposes of our project, it is reassuring that the MDS appears to be internally consistent; that is, that variables that should be correlated with the presence of pressure ulcers do, in fact, predict them, and that the use of skin care interventions increases as risk for ulcer development increases. It is also encouraging that few patients were missing data. These results suggest that we may be able to use the MDS variables of presence of pressure ulcers and use of skin care interventions as quality of care indicators. The data for this article are from a demonstration project from several years ago; it is not clear that MDS data currently being routinely submitted by skilled nursing facilities as part of prospective payment are of the same quality.

Citation: Denny, Diane S., Victoria Christian, Victoria N. Nordan, and Mary Frances Therriault. "Comparative Data Analysis Using Collaborative Skilled Nursing/Long-Term Care Indicator Assessment." *Journal for Healthcare Quality*, vol. 20, no. 4, July/August 1998, pp. 12-20.

Objective: To identify opportunities for quality improvement using defined outcome-based indicators in skilled nursing and long-term care.

Methods: Case study.

Discussion: The authors described their experience in using quality indicators in Eastern Mercy Health System's skilled nursing and long-term care facilities. They developed four sets of quality indicators covering: (1) use of physical restraints, (2) resident falls, (3) use of psychotropic medications, and (4) pressure ulcers.

A number of lessons were learned from this process. For example, one facility stated that its use of physical restraints was too high. The staff decided that they wanted to become a restraint-free facility, but their plan encountered resistance from physicians, staff, and families. A compromise was reached where they agreed to use the least restrictive restraint method. The facility changed several policies and procedures. For example, the facility no longer accepts restraint orders in effect at the time of admission.

Conclusions: The authors concluded that utilizing these indicators was useful for improving the quality of patient care and improving clinical practice. However, this article did not discuss how the quality indicators were developed; nor did it describe how the data to measure these indicators were collected. Specific details on the content of the indicators were not presented. The indicators used by Eastern Mercy Health System may be useful in a larger context, but additional detail is needed.

Citation: Dubay, Lisa C. "Comparison of Rural and Urban Skilled Nursing Facility Benefit Use." *Health Care Financing Review*, vol. 14, no. 4, Summer 1993, pp. 25-37.

Objective: To document differences in the use of the Medicare skilled nursing facility (SNF) benefit as a first step in examining whether differences in residence influence access to care, and to highlight the importance of the swing-bed program in rural areas.

Methods: This study used 1987 Medicare claims files and the Health Insurance Skeleton Eligibility Write-Off File. Data for enrollees with both Part A and Part B Medicare coverage were used to analyze nursing home use.

Results: Almost 28 percent of Medicare enrollees live in rural areas of the country. As compared to urban enrollees, rural enrollees are slightly older, a higher percent are male, and more are white. They are also more dependent in performing activities of daily living (ADLs) and instrumental activities of daily living (IADLs).

Other sources have shown that the risk of nursing home placement increases with age and ADL limitations. Risk of placement is also greater for males and whites.

Medicare enrollees can be admitted to both certified skilled nursing facility (SNF) beds and hospital swing beds. If both SNF and swing beds are included, rural beneficiaries are admitted at a rate 15.3 percent higher than urban beneficiaries. However, in the case of certified SNF beds, rural beneficiaries are admitted 17.5 percent less often than beneficiaries in urban areas.

In thinly populated areas not adjacent to Metropolitan Statistical Areas, more than 50 percent of all Medicare covered admissions are to swing beds.

There is considerable variation in the use of the SNF benefit across rural and urban areas. Variation in the degree to which admissions to swing beds contribute to the rural admission rate is large. Length of stay for swing bed admissions is much shorter, even controlling for the patient's diagnostic related group (DRG).

While the principal diagnoses treated under the SNF benefit are comparable, their relative importance varies across categories. It is not clear whether this accounts for the disparity in length of stay, but it shows that the rural and urban Medicare populations are different.

Rural users of the SNF benefit are slightly younger than urban users despite the fact that rural Medicare beneficiaries are older overall. This may indicate that rural users are being institutionalized at a younger age.

Conclusions: This study cannot make conclusions regarding whether urban and rural differences in SNF benefit use reflect differences in access to care. However, home health use is lower in rural areas, and there is an increased demand for SNF services.

Citation: Duncan, R. Paul, Raymond T. Coward, and Gregg H. Gilbert. “Rural-Urban Comparisons of Age and Health at the Time of Nursing Home Admission.” *Journal of Rural Health*, vol. 13, no. 2, Spring 1997, pp. 118-125.

Objective: To re-examine the hypothesis that the rural elderly admitted to nursing homes are younger and healthier than elders in urban facilities.

Methods: The study was conducted in eight counties in northern Florida chosen to be representative of the range of residential contexts. Nine urban and nine rural facilities participated. All newly admitted residents age 65 or over were asked to participate. Data were collected in the fall of 1991 and the spring of 1992. Of 182 admissions, 113 patients actually participated. Data were collected through personal interviews (or by proxy if the patient was not able to communicate). All interviews were completed within 30 days of admission.

Results: There were few differences in the demographic characteristics of urban and rural patients. One significant difference was that urban residents were more likely to be black. Rural admissions were not younger. Urban and rural patients were also similar in terms of self-reported health status. Rural residents were significantly more likely to report a need for specialized medical treatments usually done only in an institutional setting. Rural residents had significantly greater disability on three of the seven activities of daily living measured. Data on independent activities of daily living were not as consistent with urban residents, showing greater deficits on some, and rural residents, showing greater deficits on others.

Conclusions: Previous studies have concluded that rural residents admitted to skilled nursing facilities were younger and less disabled than their urban counterparts. This was interpreted as an indication of poor access to suitable alternatives to substitute for nursing homes in small towns and rural communities.

The results of the present study are contrary to the results of previous studies. There are several explanations for this: (1) this study was done in Florida, which is more representative of the urban/rural distribution of nursing home patients in the nation as a whole, (2) this study collected data at the time of patient admission, not just at the time of the study (which could have been at any point during a patient's admission), and (3) the nursing home environment has changed a great deal in the time since the prior studies were done. This study did not find any apparent barriers to access for skilled nursing care based on urban/rural location.

Citation: Fairchild, David G., Mairead L. Hickey, E. Francis Cook, Rita M. McCarthy, Laura P. Rossi, Samantha C. Timmons, Carol M. Mangione, and Thomas H. Lee. "A Prediction Rule for the Use of Postdischarge Medical Services." *Journal of General Internal Medicine*, vol. 13, no. 2, February 1998, pp. 98-105.

Objective: To develop a screening instrument that could be easily administered to patients upon hospital admission, and that could help hospital discharge planners identify patients likely to need postdischarge medical services. The outcome, "any use of postdischarge medical services," was binary and included use or nonuse of all services requiring discharge planner intervention--placement in a nursing, rehabilitation, or mental health facility; arrangement of medical equipment at home; or home health care.

Methods: The screening instrument was first derived using one sample of patients, then validated on a separate sample of patients. The study population comprised patients admitted consecutively to the general medical service of Brigham and Women's Hospital, a large urban teaching hospital in Boston.

Data sources for the derivation and validation of the screening instrument were (1) a patient questionnaire that collected information on medical conditions, social support, employment status, and health status (SF-36), and (2) hospital administrative data. Discharged patients were contacted by telephone 30 days after discharge to ascertain the outcome (that is, any use of postdischarge services).

Results: In the derivation sample, one percent of patients were placed in a nursing home and four percent in a rehabilitation hospital. In the validation sample, two percent were placed in a nursing home and seven percent in a rehabilitation sample.

In a logistic regression in which the outcome variable was any use of postdischarge medical services, three variables were independent and significant predictors: age (OR 1.4), SF-36 physical function score (OR 1.3), and SF-36 social function score (OR 1.2). From these results the authors developed the following risk factors: age ≥ 65, SF-36 physical function score ≤ 15, and SF-36 social function score ≤ 50. The model also held up in the validation sample.

Conclusions: This article has limited usefulness for our study for the following reasons: (1) it is based on the implicit assumption that prevailing patterns of use of postdischarge services at a single teaching hospital are clinically appropriate and necessary, (2) it lumps nursing home (NH) care together with home health care and durable medical equipment (DME) into a single outcome, (3), it includes all adult inpatients, not just Medicare patients (mean age of patients in the study = 55). In addition, the screening instrument relies almost exclusively on functional and social support data that will not be available to us in Medicare administrative data. The article does highlight, however, the importance of *age*, *functional status*, and *social support* in discharge planners' decision making.

Citation: Fries, Brant E., Catherine Hawes, John N. Morris, Charles D. Phillips, Vince Mor, and Pil S. Park. "Effect of the National Resident Assessment Instrument on Selected Health Conditions and Problems." *Journal of the American Geriatrics Society*, vol. 45, 1997, pp. 994-1001.

Objective: To evaluate the effect of the implementation of the Resident Assessment Instrument (RAI) system on selected conditions representing outcomes for nursing home residents.

Methods: Data from 2,128 residents from 268 nursing homes in 10 states before RAI implementation and 2,088 residents from 254 of the same nursing homes were collected for a quasi-experimental study that utilized pre- and post-designs, with assessments at baseline, and six-month followup.

Measures of dehydration, falls, decubitus, vision problems, stasis ulcer, pain, dental status (poor teeth), and malnutrition (from the RAI Minimum Data Set) were examined. A body mass index score below 20 was used as an indicator of poor nutrition, and vision was assessed using a four-level scale; other conditions were represented by their presence or absence. Decline and improvement were computed as the changes in level between baseline and followup.

Results: Of the eight health conditions representing poorer health status, dehydration and stasis ulcer had significantly lower prevalence after the implementation of the RAI in 1993, compared with 1990--before the RAI was implemented. However, there was also an increase in the prevalence of daily pain. Fewer residents declined in health after implementation for two out of the eight conditions (i.e., nutrition and vision). These same two conditions had significantly reduced rates of six-month improvement. There was also a decline in the postimplementation rate of improvement for severe pain. The combined eight conditions showed reductions in the rates of both decline and improvement.

Conclusions: Several outcomes improved for nursing home residents after the implementation of the RAI. Of the four conditions for which there are significant declines in prevalence or outcome changes, three are specifically addressed in the care planning guidelines incorporated in the RAI system (all except stasis ulcer, although there is a RAP for decubitus ulcer). There is also no RAP for pain, which demonstrated an increase in baseline prevalence.

The article presents some important measurement issues that warrant further exploration, such as the possibility of methodological contamination in spite of careful controls. One limitation of this study was the variability in the assessments done by the research nurses. In addition, the authors were unable to completely document the causal link between the RAI and patient outcomes.

Citation: Funnell, Martha M. "Care of the Nursing-Home Resident with Diabetes." *Clinics in Geriatric Medicine,* vol. 15, no. 2, May 1999, pp. 413-22.

Objective: To review the current standards of care for elderly nursing home residents with diabetes.

Methods: Literature review.

Results: Data from the Institutional Component of the 1987 National Medical Expenditures Survey (NMES) indicated that 18.3 percent of all U.S. nursing home residents were diagnosed with diabetes, compared with 12.6 percent of the general population. Other studies indicate that diabetes is a significant predictor of nursing home admission.

The NMES also reported that among nursing home residents with diabetes, 80 percent had cardiovascular disease, 56 percent had hypertension, 39 percent had senile dementia, 69 percent had two or more additional health problems, 24 percent had impaired hearing, 33 percent had visual impairment, 6 percent were blind, and almost all had impairments in their ability to perform activities of daily living.

Nursing home residents with diabetes are generally in poorer health and tend to have more chronic diseases than nondiabetic residents. Thirty-four percent had three or more other chronic diseases compared with only 26 percent of nondiabetic residents. Nursing home patients with diabetes are significantly more likely to have urinary-tract and skin infections than those without diabetes. In addition, urinary-tract infections, peripheral vascular disease, skin necrosis, and leg ulcers are more prevalent among nursing-home patients with diabetes than in age-matched noninstitutionalized persons with diabetes.

In 1981, the American Diabetes Association (ADA) and the American Association of Diabetes Educators (AADE) developed guidelines for diabetes care in skilled nursing homes. These guidelines included nine criteria related to medical care, medication administration, urine glucose monitoring, hypo- and hyperglycemia, nutrition, foot care, activity, and sick-day management. For each criterion, guidelines for staff education, staff action, reporting and recording, and desired outcomes were included.

Recent standards of care for diabetes management and guidelines for prevention and treatment of complication of diabetes would seem to apply to persons with diabetes in nursing homes, although this is not explicitly stated.

However, deficiencies in meeting these guidelines have been noted in surveys of nursing homes.

The standard ADA recommended diet for medical nutritional therapy is not applicable to most diabetic patients in the nursing home setting. No special dietary restrictions are needed for nursing home patients. Standard diets in nursing homes are provided at consistent times, meet recommendations for nutrient content, and are planned so that similar types and amounts of foods are provided at each meal. There is little evidence that a regular diet results in loss of glycemic control among nursing-home patients and may prevent the usual admission weight loss.

Adjustments may need to be made in the standard calorie level and sodium and fat content provided by the home to improve glycemia, blood pressure, and lipid levels. Residents who have decubitus ulcers or peripheral vascular disease may benefit from zinc replacement to facilitate immune function. Patients with a history of or significant risk for hip fractures may benefit from vitamin D and calcium supplementation.

Blood glucose monitoring is essential to achieve and maintain blood-glucose control and to recognize hypo- and hyperglycemia. Urine testing fails to meet current ADA guidelines, which can provide inaccurate information in patients with elevated renal thresholds, and is more time-consuming than blood testing in this population.

Blood glucose monitoring is needed for patients taking insulin, particularly those who are unable to recognize or report hypoglycemia. The monitoring schedule needs to be individualized based on the usual glycemic stability of the resident, treatment regimen and blood glucose goals. For patients who have relatively stable blood glucose levels and are within the target range, weekly fasting and 2-hour postprandial readings have been recommended. The results of hemoglobin A_{1C} measurements evaluated in conjunction with capillary glucose monitoring data provides an overall measure of glycemic control, but hemoglobin A_{1C} frequently is not measured in nursing homes, so that information about glycemic control in this population is limited.

Fasting target levels ranging from 100 to 140 mg/dL and 2- to 4-hour post-parandial levels of less than 200 mg/dL have been suggested as appropriate and achievable in this population.

Two thirds of nursing home residents are treated with either insulin or oral hypoglycemic agents.

ADA/AADE guidelines for diabetes care in skilled nursing homes call for weekly foot inspections under the direction of a registered nurse and daily foot care. A more recent publication recommends that individuals at high risk be taught to perform foot inspections on a daily basis. Because nursing-home residents with diabetes are also vulnerable to pressure ulcers and other infections, skin care and hygiene are important areas of nursing home diabetes care.

Hypoglycemia and hyperglycemic hyperosmolar nonketotic syndrome can represent significant risks for older adults. Many nursing homes lack protocols for when to contact physicians or treat these acute events, which can result in costly and serious consequences. The implementation of these protocols is associated with a decrease in hospitalizations for the acute complications of diabetes.

Annual examinations for diabetics should include measurement of blood pressure, eye and visual examinations, and measurement of serum creatinine if microalbuminuria is present. These guidelines also would seem to apply to nursing home residents with diabetes, however, fewer receive ophthalmologic examinations than the general population, and others tests for complications also are done less frequently than recommended.

Conclusions: Evidence-based guidelines for the care of nursing home residents with diabetes are not currently available. Diabetes is often under-treated and mismanaged in nursing home residents.

Citation: Gage, Barbara. "Impact of the BBA on Post-Acute Utilization." *Health Care Financing Review*, vol. 20, no. 4, summer 1999, pp. 103-126.

Objective: To summarize changes to Medicare postacute care (PAC) payment policy in the Balanced Budget Act of 1997, describes patterns of PAC use prior to BBA 1997, and infers possible effects of BBA 1997.

Methods: Medicare 1995 5-percent claims sample and Medicare denominator files. The author presents a multinomial logit model in which the outcome variable is (1) no PAC, (2) rehab hospital only, (3) skilled nursing facility (SNF) only, (4) home health care (HHC) only, (5) rehab hospital plus HHC, or SNF plus HHC, and (6) rehab plus SNF, or rehab plus SNF and HHC, within one month after hospital discharge. Independent variables included basic beneficiary characteristics available in the Medicare denominator file, beneficiary death in 1995 (a measure of severity of illness), hospital readmission in the postacute period (a measure of severity of illness), geographic region, and one of nine diagnostic related groups (DRGs). Results are presented as predicted probabilities.

Results: Beneficiary characteristics associated with increased SNF usage: age = 80 (versus age = 65), disabled before age 65, female sex, having Medicaid buy-in, death in 1995, and hospital readmission in the postacute period.

The author then compares the univariate associations between the DRG and PAC setting with the associations after adjustment for beneficiary characteristics in the model. (She contends that substantial differences between the unadjusted and adjusted results suggests that health-related factors determine the choice of PAC setting, and the financial incentives under BBA 1997 will then likely have less impact. If undadjusted and adjusted results are similar, however, then health-related factors are less important, PAC settings may be more or less interchangeable, and financial incentives will tend to redirect patients towards the highest paying appropriate facility.) Compared to unadjusted results, adjustment for beneficiary characteristics did cause shifts in the distribution of PAC settings--for DRGs 014 (specific cerebrovascular disorders except TIA), 210 (hip and femur procedures except major joint), and 079 (respiratory infections). PAC settings did not change much with adjustment, however, for DRGs 089 (pneumonia), 127 (heart failure and shock), 088 (chronic obstructive pulmonary disease), 296 (nutritional and miscellaneous metabolic disorders), and 209 (major joint and limb reattachment procedures of lower extremity).

Conclusions: Some DRGs are more susceptible to financial incentives than others. This study of "who goes where" does not address the issue "who should go where." But, it does use claims data to study PAC use. The study shows the limitations of claims data, since many factors that likely affect choice of PAC setting, functional status, social support, and living arrangements are unmeasured. The study also aggregates diagnosis codes to the DRG level, which may obscure differences between diagnoses.

Citation: Gustafson, David, Francois Sainfort, Richard Van Konigsveld, and David Zimmerman. "The Quality Assessment Index (QAI) for Measuring Nursing Home Quality." *Health Services Research*, vol. 25, 1990, pp. 97-127.

Objective: To describe and validate the Quality Assessment Index, a model for gauging nursing home quality using process and outcome criteria.

Methods: The index was developed by assembling clinical panels, selecting specific facility attributes in consultation with the panels, developing components of those attributes, weighting the attributes, and presenting simulated results to the panel. The model was subsequently tested for reliability and validity. The QAI model itself consisted of seven components: direct resident care, the process of resident care, recreation activities, staffing, facility attributes, dietary factors, and community ties.

The model was tested in 111 nursing homes in Wisconsin, New York, and Massachusetts. Research teams interviewed residents, administrators, and staff; analyzed medical records; and conducted observational studies.

Interrater and intrarater reliability was evaluated by conducting two assessments by two teams at one-month intervals.

To evaluate the construct validity of the QAI, a panel of three registered nurses with backgrounds in nursing home quality assurance was convened to assign severity scores to deficiencies identified by state surveys in 36 of the sample nursing homes. Facility QAI scores were then regressed on the sum of severity-adjusted deficiencies.

Results: The QAI was found to have high interrater and intrarater reliability. Pearson correlation coefficients across multiple raters for the seven components varied from 0.71 to 0.96. Correlations for the same rater one month apart varied from 0.83 to 0.94.

Regression analysis of QAI scores on severity-adjusted deficiencies found statistically significant relationships for every component, establishing construct validity of the QAI.

Conclusion: The QAI shows promise as a research tool and possibly as one means by which states may help assure quality of care in nursing homes.

Citation: Hawes, Catherine, John Morris, Charles Phillips, et al. "Development of the Nursing Home Resident Assessment Instrument in the USA." *Age and Aging*, vol. 26, no. S2, September 1997, pp. 19-25.

Objective: To describe the development of the nursing home resident assessment instrument (RAI), its testing, and clinical use.

Methods: Essay.

Results: The RAI development team began work in October 1988. It reviewed existing geriatric assessment instruments and identified areas felt to be essential for assessment and care planning in nursing homes. Three elements were identified as essential for a comprehensive assessment instrument: a set of core items to identify each resident's needs, a set of specialized protocols linked to particular problems or conditions of a given resident, and a detailed user manual.

The minimum data set was developed to contain domains that captured resident background, communication patterns, physical functioning, mood and behavior, diagnoses, oral and nutritional status, skin condition, continence, medication use, and special treatments and procedures. The RAI was tested in 28 nursing homes in six states. Dual assessments of more than 600 residents were performed to establish interrater reliability of items.

A pre-post study of the RAI's effects on nursing home outcomes in 269 nursing homes found the implementation of the RAI was associated with increased accuracy of information in residents' medical records, more comprehensive care planning, improvements in quality of care and quality of life, reductions in cognitive and activities of daily living decline among residents, and a reduction in the rate of hospitalization of residents.

Conclusion: Use of the RAI was associated with improvements in process quality, resident outcomes, and reduced hospitalization of residents.

Citation: Heston, Leonard L., Judith Garrard, Lukas Markis, Robert L. Kane, Susan Cooper, Trudy Dunham, and Daniel Zelterman. "Inadequate Treatment of Depressed Nursing Home Elderly." *Journal of the American Geriatrics Society*, vol. 40, November 1992, pp. 1117-1122.

Objective: To determine the prevalence of antidepressant drug treatment among nursing home elderly with major depression.

Methods: Data were collected from the medical records of 5,752 elderly nursing home patients who were admitted between 1976 and 1983. Nurse data collectors recorded physician diagnoses, drugs used, and alertness ratings. A diagnosis of depression was equivalent to a diagnosis of major depression according to the Diagnostic and Statistical Manual DSM-III-R.

Results: Of the 868 persons with a diagnosis of depression in the medical record, only 10 percent were treated with antidepressant drugs. More received neuroleptics and benzodiazepines than received antidepressants, but most (52 percent) received no psychoactive drug at all.

Conclusions: The authors concluded that the vast majority of nursing home residents with a recorded diagnosis of depression were untreated, incorrectly treated, or under-treated. The data on which this study is based are now more than 20 years old. It is likely that the standards of practice have changed in the last 20 years, particularly with the introduction of the Minimum Data Set and Resident Assessment Protocols for psychosocial well-being, mood state, and behavioral symptoms. However, it is possible that the depression in nursing home residents remains under-treated.

Citation: Hoenig, Helen, Neil Nusbaum, and Kenneth Brummel-Smith. "Geriatric Rehabilitation: State of the Art." *Journal of the American Geriatrics Society*, vol. 45, November 1997, pp. 1371-1381.

Objective: To provide a clinically useful conceptual framework for the evaluation and treatment of disability in older persons, to review the rehabilitation of common conditions affecting function in older persons, and to discuss the effects of the ongoing changes in the health care system on geriatric rehabilitation.

Methods: Literature review.

Results: Rehabilitation is defined as (1) restoration of form and function following illness or injury, and (2) restoration of an individual's capability to achieve the fullest possible life compatible with his or her abilities and disabilities.

Rehabilitation for musculoskeletal disorders includes five types of interventions: (1) exercise to increase strength, (2) exercise to increase range of motion, (3) adaptive techniques and assistive devices, (4) therapeutic modalities (heat, cold, ultrasound), and (5) splints and orthotics.

For patients who have suffered a stroke, rehabilitation goals should take into account the likely functional outcomes and discharge destination. The choice of a setting for rehabilitation will depend on the patient's medical stability and physical endurance, degree of functional impairment, and the kinds and amount of support available in the home.

In hip fracture rehabilitation, the goals are to restore functional ambulation and independent self care. Early mobilization is desirable because it reduces the cost of care and can prevent post-operative complications resulting from deconditioning and bed rest. Early mobilization includes high frequency physical and occupational therapy (more than five sessions per week). Any limitations in weight bearing will reduce the patient's ability to progress in rehabilitation and should be avoided if possible.

Conclusions: Understanding of the causes of disability and the effectiveness of rehabilitation interventions has increased dramatically in the last decade. However, the cost-effectiveness of many interventions is yet unproven. This article provides a good summary of the key aspects of rehabilitation for several common conditions including stroke, heart disease, and hip fracture.

Citation: Johnson, Mark V., Kenneth Wood, William B, Stason, and Phillip Beatty. "Rehabilitative Placement of Poststroke Patients: Reliability of the Clinical Practice Guideline of the Agency for Health Care Policy and Research." *Archives of Physical Medicine and Rehabilitation*, vol. 81, May 2000, pp.539-548.

Objective: To determine the interrater reliability of the Agency for Health Care Policy and Research's (AHCPR) clinical practice guideline of rehabilitative placement of poststroke patients.

Methods: Pairs of rehabilitative professionals rated the appropriateness of rehabilitative placements for 60 patients with moderate to severe stroke in acute care hospitals in three regions of the country. Data were abstracted from medical records or obtained by direct evaluation of the patients.

Results: Good reliability was attained for home and nursing facility placement with rehabilitation services but with no multidisciplinary rehabilitation program. Serious reliability problems were found for placements in low-intensity outpatient rehabilitation and high-intensity inpatient rehabilitation programs. Chief sources of unreliability were ambiguous or missing data in hospital medical records, complexities in the guideline, and raters' tendencies to follow their own clinical judgments. More than one type of placement was appropriate for 65 percent of patients.

Conclusions: The authors conclude that reliable placement guidelines are possible, but aspects of the guideline require additional development. Evidence of demonstrated reliability and validity will be required to resolve disputes between rehabilitation professionals and payers regarding appropriate levels and types of rehabilitation, and to guide patients and their families. This study points out the lack of data to support the use of many clinical practice guidelines.

Citation: Kane, Robert L., Qing Chen, Michael Finch et al. "Functional Outcomes of Posthospital Care for Stroke and Hip Fracture Patients Under Medicare." *Journal of the American Geriatrics Society*, vol. 46, 1998, pp. 1525-1533.

Objective: To assess differences in clinical outcomes associated with discharge from hospital to nursing homes, home health care, and rehabilitation hospitals for elderly Medicare patients with diagnoses of stroke or hip fracture.

Methods: Prospective, nonrandomized study. Medicare patients with diagnosis of stroke or hip fracture enrolled prior to discharge from 52 hospitals in three cities in 1988-89. Patients were interviewed in person prior to discharge and again six weeks, six months, and 12 months after hospital discharge. Outcome measures were the level and change in activities of daily living scores, mortality, and rehospitalization. Effect of discharge location was estimated using one-way analysis of variance. The method of instrumental variables was used to correct for nonrandom assignment to posthospital care.

Results: Twelve months after hospital discharge, improvement in ADL dependency scores was (statistically) significantly greater for stroke patients discharged to rehabilitation hospitals, home care, or to home without formal care than it was for those discharged to nursing homes.[1] For hip fracture patients, discharge to a rehabilitation hospital or home care showed greater improvement than those discharged to nursing homes. These results rely on the method of instrumental variables to correct for nonrandom selection of discharge locations.

Stroke patients discharged to a nursing home had higher adjusted mortality rates one year after discharge than did those discharged elsewhere. Adjusted mortality rates were not significantly different for hip fracture patients. One-year adjusted rehospitalization rates for stroke patients were 25 percent among those discharged to rehab hospitals or to home without formal care, 22 percent for those discharged to nursing home, and 21 percent for those discharged to home health care (differences statistically significant). The one-year rehospitalization rate for hip fracture patients was 27 percent for those discharged to home health care and 16 percent for those discharged to nursing homes.

Conclusions: The authors emphasize "the poor functional improvement seen in patients who received postacute care in a nursing home setting." They suggest that nursing homes may have been ill equipped to respond to the care needs of patients discharged from hospital since the implementation of Medicare's hospital prospective payment system, though they acknowledge that changes have occurred since the data were collected. They also note the apparent advantages associated with care in rehab hospitals, although the expense of such care is a concern.

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[1] The finding that stroke patients discharged to home without formal care showed greater ADL improvement than those discharged to nursing home casts some suspicion on the degree to which they succeeded in removing effects of selection bias.

Citation: Kane, Robert L. "Assuring Quality in Nursing Home Care." *Journal of the American Geriatrics Society*, vol. 46, 1998, pp. 232-237.

Objective: To identify and analyze the role of government regulation in improving the quality of care in nursing homes.

Methods: Essay.

Discussion: Government regulation of nursing homes has resulted both from the magnitude of government expenditure on nursing home care and from periodic revelation of poor care and financial misbehavior. Thinking about quality continues to be dominated by the structure-process-outcome paradigm of Donabedian. While the current emphasis on quality measurement via outcomes measurement is laudable, the effort to date has been, in Kane's opinion, oversold.

While systematic assessment of nursing home residents is a desirable goal, the nursing home Minimum Data Set (MDS), while useful, could be improved substantially. Its most serious flaw, in Kane's view, is its focus on complete uniformity of data. Because of this, the MDS foregoes any attempt to elicit information directly from residents, since not all residents would be able to provide information of any kind. Moreover, he argues, attempts to demonstrate that mandated assessment of nursing home residents have brought about major improvements in care have relied on unconvincing pre-post designs.

A heavier focus on outcomes in the regulation of nursing homes is desirable. Nevertheless, some serious problems remain to be addressed.

1. A reasonably accurate method of risk adjustment is required to ensure that comparable groups of residents are compared across facilities.

2. Outcomes-based efforts to regulate quality must be focused on those outcomes for which we have reasonable evidence of a relationship between clinical intervention and improved outcomes. There must be some evidence of a relationship between outcomes and the processes of care.

3. Sufficient data must be available so that the trajectory of improvement or decline for a resident or group of residents, can be compared with the expected trajectory for similar individuals.

Finally, Kane distinguishes between outcome measures thought of as screens that may trigger further investigation of possible poor care and outcome measures as a direct basis for rewards or punishments. The latter requires a substantially greater level of accuracy and discrimination and will generally require large samples.

Citation: Kane, Robert L., Michael Finch, Lynn Blewett, Qing Chen, Risa Burns, and Mark Moskowitz. "Use of Post-Hospital Care by Medicare Patients." *Journal of the American Geriatrics Society*, vol. 44, March 1996, pp. 242-250.

Objective: To examine the characteristics of patients, cities, and hospitals associated with discharge to various types of post-hospital care.

Methods: The study enrolled 2,248 consecutive Medicare patients having one of five diagnosis related groups (DRGs) who were about to be discharged from one of 52 hospitals in three cities. The period of enrollment was 1988-1989. Data were collected from patient interviews, medical records, and from the Medicare Automated Data Retrieval System (MADRS). Logistic regression models were used to compare the factors associated with different discharge locations: home with no formal care, home with formal care, nursing home care, and inpatient rehabilitation.

Results: Discharge location was predicted correctly in 52 to 71 percent of cases, depending on the DRG. Most of the predictive power of the model came from the information collected at the time of the discharge interview. Living alone and functional dependency at discharge were the most significant predictors.

Almost 60 percent of live discharges received some type of post-hospital care services: 28 percent went home with home health care, 22 percent went to nursing homes, and 8 percent went to a rehabilitation facility.

For stroke patients, the pattern of discharge locations was almost evenly divided, with one-third of the patients going home with no formal care. For patients with chronic obstructive pulmonary disease, congestive health failure, or elective hip replacements (hip procedures), more than half of the patients went home with no formal care. For this group of patients, home care was the most utilized formal care option. Hip fracture patients, whether treated conventionally or with arthroplasty, were most likely to be discharge to a nursing home.

Conclusions: Patient discharge location can be predicted using information on functional deficits, comorbidities, severity of illness, and clinical instability. However, the predictions only were moderately accurate. The authors conclude that greater accuracy could be attained by the inclusion of other factors not measured in their data. This article shows that a crude indicator for access to SNF care could be developed, but needed data are not all available in administrative data sets.

Citation:	Karon, Sarita, Francois Sainfort, and David Zimmerman. "Stability of Nursing Home Quality Indicators Over Time." *Medical Care*, vol. 37, 1999, pp. 570-579.
Objective:	To assess the stability of nursing home quality indicators (QIs) over three- and six-month periods.
Methods:	Nursing home QIs were constructed for each of 512 facilities in Kansas and South Dakota for each of the first three quarters of 1996. The measures--proportions, ranks, and flags--were computed based on all facility residents other than those whose most recent assessment was an initial hospital admission or readmission. Pearson correlation coefficients were used to assess stability of proportions, Spearman rank-order correlation coefficients were used to examine the stability of ranks, and Cohen's kappa was used to examine stability with respect to flags. The stability of each QI was assessed among quarters 1 and 2, 2 and 3, and 1 and 3.
Results:	Pearson correlation coefficients for most so-called "prevalence QIs" measured three months apart are high--generally above 0.8 and sometimes above 0.9. When measured over six-month periods, correlations were lower, but usually above 0.6 or so. The lowest six-month correlations were for falls (0.40), urinary tract infections (0.51), and weight loss (0.22). The authors argue that these three most resemble "incidence QIs," that is, conditions whose occurrence is highly related to pre-existing risk factors of residents and for which the proper measure of quality is change over time rather than the facility level.
Conclusions:	QIs are reasonably stable over short periods of time. State survey agencies may best identify facilities with quality problems by focusing on those with poor QI rates that are stable from one quarter to the next.

Citation: Keay, Timothy J., Lisa Fredman, George A. Taler, Soma Datta, and Steven A. Levenson. "Indicators of Quality Medical Care for the Terminally Ill in Nursing Homes." *Journal of the American Geriatrics Society*, vol. 42, no. 8, August 1994, pp. 853-860.

Objective: To develop performance indicators of individual physicians' care of terminally ill patients in the nursing home setting ("Monitoring of the following indicators will give an indication of the performance of a particular physician in a particular nursing home..."). Data on performance is to be collected from a review of patients' nursing home charts.

Methods: The authors first performed a literature review from which they drafted a set of indicators that they categorized, in decreasing order of the strength of support in the literature, as "standards, guidelines, or options." These draft indicators were presented at a series of regional meetings of long-term care medical directors in Maryland. Based on the medical directors' input, one guideline, relief of dyspnea, was upgraded to a standard. Finally, the indicators were presented to a group of expert geriatricians. These experts agreed with the indicators, and also recommended that terminally ill patients who died within one week of transfer from the nursing home to the acute care setting should be included as eligible cases for review. Finally, the experts felt that the indicators needed additional widespread testing before they could be recommended for incorporation into Joint Commission on Accreditation of Healthcare Organizations or legal requirements.

The population covered by the guideline were "terminally ill patients" in the nursing home setting. The authors recognized the difficulties in the term "terminally ill" for a practical indicator system, so they developed their own operational definition of "patients who died...and had been declared antemortem to be terminally ill, in those or similar words, by his/her care providers." The charts of such patients would then be reviewed for the presence or absence of the proposed indicators. As mentioned above, the study panel of geriatric experts also recommended including patients who died in the acute hospital setting within one week of transfer from the nursing home and who had been identified as terminally ill prior to transfer.

The goal of the study was to define indicators of terminal care for "nursing home" patients. The authors literature search, however, included articles on terminal care or palliative care in all settings (home hospice, inpatient hospice, acute care hospital, long-term care setting).

Results: The authors developed ten indicators. The authors define "standards" as indicators with a 100 percent performance standard, "guidelines" as indicators with a >80 percent performance standard, and "options" as indicators with a variable performance standard. The following is modified from a table in the article.

RECOMMENDED INDICATORS FOR PHYSICIANS' CARE OF TERMINALLY ILL PATIENTS

Indicator	Performance Standard	Exception
1. Documentation of patient wishes or advance directive is present.	100%	Patient was always incapacitated and without advance directive or legal proxy.
2. If terminally ill patient is reported to be in pain, this is addressed by the physician and active attempts are made to reduce the pain.	100%	Minor pain symptoms in cognitively intact patient.
3. Dyspnea, if present, is addressed *and* attempts are made to minimize the dyspnea.	100%	Physician not made aware of dyspnea.
4. If patient has pain, this is followed to assess results of intervention, *and* pain is reduced.	>80%	Intractable pain even after consultation.
5. Uncomfortable symptoms are addressed *and* attempts are made to reduce symptoms.	>80%	Untreatable symptoms; physician not notified of symptoms.
6. Psychological or social support is documented in the patients' medical record.	>80%	Patient death within a few hours of being declared terminally ill; patient cognitively impaired *and* family and friends are not reasonably available.
7. Interventions not wanted by the patient are not performed.	>80%	Conflicting patient directives.
8. Hygiene status is noted by physician.	Variable option	
9. Family/patient counseling by physician.	Variable option	
10. Follow-up bereavement counseling is offered by the physician.	Variable option	

Conclusions: In general, these indicators do have face validity, support from literature, and endorsement by clinical experts. However, many indicators appear to be ambiguous and thus potentially unreliable. For example, in the second and third indicators, whether "attempts" were made might be open to interpretation, and it might be difficult to judge in the fourth indicator whether pain is truly "intractable." There may also be problems with missing data. The seventh indicator, for example, may be difficult to measure if "interventions not wanted by the patient" are not well documented. In this article, the authors did not actually pilot test these indicators.

For the specific purposes of our project, the indicators also present numerous serious difficulties. First is the selection of patients to be studied. Since we will not have access to actual medical records, we cannot use the authors' definition of terminally ill. We could consider selecting patients admitted to skilled nursing facilities with diagnoses suggesting terminal illness (such as advanced, metastatic cancer) who die shortly after admission, or we could consider using the hospice item in the Minimum Data Set. Second, given the lack of patient medical records, we will be unable to ascertain whether symptoms have been addressed or whether attempts have been made to alleviate symptoms. However, there are items in the MDS for pain, shortness of breath, indicators of depression, and vomiting that we could consider using somehow to measure patient care.

Citation: Kelly-Hayes, Margaret, and Marion A. Phipps. "Preventive Approach to Poststroke Rehabilitation in Older People." *Clinics in Geriatric Medicine*, vol. 15, no. 4, November 1999, pp. 801-817.

Objective: To present a preventive approach to poststroke rehabilitation including predictors of patient outcome, criteria for determining the most appropriate setting for rehabilitation, and some preventive health issues.

Methods: Literature review.

Results: The selection of a setting for poststroke rehabilitation depends on a number of factors including the intensity of the rehabilitation needed, the availability of programs, family preference, and the patient's health status.

Predictors of poor outcome after stroke include older age, extended urinary and bowel incontinence, and visuospatial deficits. Other studies have found that stroke severity, presence of symptomatic comorbidites, and older age were associated with poorer outcomes. Another study found that older age and greater severity were the strongest predictors of change in functional disability and that individuals older than 75 years were less likely to be discharged home. Factors associated with greater improvement in functional status for rehabilitation admissions were younger than 70 years in age, lower in functional ability at admission, with the absence of communication problems, urinary catheter, decubiti, infection, and neurogenic bladder. The authors also cited the Framingham study, in which the severity of the stroke, the presence of comorbid disease, and older age were all associated with poor survival. The absence of a wife for men and severity of disability and older age for women determined who would be institutionalized.

The general approach to stroke rehabilitation consists of prevention and treatment of medical complications, restoration of maximal independent functioning, facilitation of psychological coping and adaptation by the survivor and their family, and enhancement of quality of life.

A study comparing outcomes and costs between stroke and hip fracture determined that elderly stroke patients treated in a rehabilitation hospital had enhanced outcomes compared with those with hip fractures. Subacute nursing homes were more effective than traditional nursing homes in returning the patient with stroke to the community, despite comparable functional outcomes.

In a meta-analysis of studies that focused on the outcome of rehabilitation for poststroke patients, it was found that the average patient receiving a focused stroke-rehabilitation program performed functional tasks better than approximately two thirds of patients in comparison groups. Furthermore, if a functional improvement makes the difference between returning home or being institutionalized, then the impact is substantial.

Criteria for subacute, or skilled facility placement include:

1. Patient has cognitive deficits that prevent learning; patient needs supportive services.
2. Patient does not have endurance to sit, supported for an hour and to participate actively in rehabilitation; patient needs low-intensity rehabilitation services.
3. Patient is capable of participating in a rehabilitation program, but needs help with activities of daily living (ADL) and adequate home support is not available.
4. Patient is able to participate in the rehabilitation program, but patient has multiple, complex deficits.
5. Patient cannot tolerate intensive rehabilitation (three or more hours a day).

A variety of complications or pre-morbid impairments may need to be considered when formulating the rehabilitation treatment plan, including:

1. Malnutrition/dehydration
2. Dysphagia
3. Skin breakdown
4. Urinary elimination
5. Altered bowel elimination
6. Fall prevention
7. Activity intolerance/fatigue
8. Altered rest and sleep patterns
9. Cognitive changes after stroke
10. Pain

Conclusions: This paper presents a broad overview of the goals of poststroke rehabilitation, predictors of patient outcome, criteria for determining an appropriate rehabilitation setting, and special preventive care issues to be addressed in the rehabilitation setting. The discussion of patient care in this paper is consistent with the recommendations of published guidelines.

Citation: Kramer, Andrew M., and Eric A. Coleman. "Stroke Rehabilitation in Nursing Homes: How Do We Measure Quality?" *Clinics in Geriatric Medicine*, vol.15, no. 4, November 1999, pp. 869-885.

Objective: To present an approach to quality measurement that can be assessed using the structure, process, and outcome triad, and to propose a shift in quality assessment to focus greater attention on patient-centered outcomes.

Methods: Essay.

Results: The clinical manifestation of stroke is a function of the type, size, and location of the injury as well as the patient's premorbid health status. The degree of spontaneous recovery is highly variable and difficult to predict. About one-third of patients who suffer an acute stroke require no formal postacute rehabilitative care.

Quality measurements necessitate taking patient-level risk factors into account in comparing care across skilled nursing facilities. These risk factors include factors independent of the stroke (such as prior functional status, level of independence in the community prior to the stroke, and availability of a willing and able caregiver) and factors associated with the stroke (such as new visual or sensory neglect, bilateral deficits, blindness, visuospatial deficits, incontinence, cognitive defects, depression, motivation, and prior stroke). Differences in the attributes of nursing homes and the characteristics of patients with stroke must be taken into account in measuring quality.

Conclusions: The article presents important factors to consider when assessing the necessity and quality of care. The most important factors predicting whether an individual is able to return to his or her home in the community after a stroke are the person's prior level of function, his or her prior level of independence in the community, and the availability of a willing and able caregiver. It is important that information regarding the patient's premorbid functional status be obtained after the acute event so that judgments can be made as to the extent to which prior function is recovered relative to an individual's ability before the stroke (in contrast to examining improvement relative to admission to the nursing home). As far as timing goes, measurement too early (i.e., one to two weeks) into the rehabilitative process may provide results that are more appropriately attributed to the care provided by the inpatient hospital rather than care delivered by the nursing home. Alternatively, measurement of outcomes at 12 months may reflect events that may have occurred long after discharge.

Citation: Kramer, Andrew M., John F. Steiner, Robert E. Schlenker, Theresa B. Eilersten, Carol A. Hrincevich, Daryl A. Tropea, Laura A. Ahmad, and Donald G. Eckhoff. "Outcomes and Costs After Hip Fracture and Stroke: A Comparison of Rehabilitation Settings." *Journal of the American Medical Association*, vol. 277, no. 5, February 1997, pp. 396-404.

Objective: To assess whether outcomes and costs differ for elderly patients admitted to rehabilitation hospitals, subacute nursing homes, and traditional nursing homes.

Methods: The study followed 519 randomly selected patients with hip fracture and 485 stroke patients admitted to one of 92 hospital-based or free-standing facilities. The data collected included the Mini Mental State Examination (MMSE), the Geriatric Depression Scale, admission status, and number of weekly physician visits. The patients' acute care medical records were reviewed, and their CTs/MRIs were reviewed by a physician.

Results: Patients in subacute skilled nursing facilities (SNFs) or traditional SNFs were less likely than patients in rehabilitation hospitals to have caregivers and have lower physical and cognitive function at the time of admission. Hip fracture patients in either setting were equally likely to return to the community. However, stroke patients admitted to rehabilitation hospitals were more likely to return to the community and to recover activities of daily living. In turn, stroke patients in subacute units were more likely to return to the community than patients in traditional SNFs. There were no differences in functional status.

Conclusions: The authors concluded that elderly patients with stroke have enhanced outcomes when treated in a rehabilitation hospital than in a subacute unit and better outcomes in a subacute unit than in a traditional skilled nursing facility. They found no differences in outcomes with respect to setting for patients with hip fracture. However, the authors did not examine the possibility of selective admission of different patient types to different settings. The results suggest that rehabilitation hospitals may preferentially admit stroke patients who are less acutely ill and impaired, with a greater chance of functional recovery, and a caregiver at home who can assist with continued rehabilitation after discharge.

Citation: Lee, A. James, Joyce H. Huber, and William B. Stason. "Factors Contributing to Practice Variation in Post-Stroke Rehabilitation." *Health Services Research*, vol. 32, no. 2, June 1997, pp. 197-221.

Objective: To analyze geographic variability in the utilization and cost of post-stroke medical care.

Methods: The study included a 20 percent random sample of Medicare beneficiaries with an admission to an acute care hospital for stroke during the first six months of 1991. Data from this admission was supplemented by data from Medicare claims and beneficiary records, the Medicare Cost Report for hospitals and nursing homes, and the Area Resource File. Weighted least squares regression was used to analyze variations in post-stroke practice patterns across 151 Metropolitan Statistical Areas (MSAs). Average post-stroke costs, utilization rates, and facility lengths of stay were regressed on patient and market characteristics. For a six-month post-stroke interval, beneficiary-level post-stroke costs and service utilization were averaged by MSA. Variables describing market conditions were then added to these MSA-level records.

Results: Patient variables rarely explained more than a third of practice variation, and often explained substantially less than that. Market variables (with some exception) tended to be relatively less important. Finally, one-half to two-thirds of the practice variations across MSAs were unexplained by the patient and market factors measured in the data.

Conclusions: A substantial portion of inter-MSA variability in utilization and intensity of post-stroke rehabilitation services cannot be explained by differences in patient characteristics. Given the large practice differences observed across MSAs, it seems unlikely that unmeasured patient differences can account for much more of the practice differences. This article did not examine either specific patient care decisions or patient outcomes associated with variations in service use and cost.

Citation: Lewis, Mary Ann, Robert L. Kane, Shan Cretin, and Virginia Clark. "The Immediate and Subsequent Outcomes of Nursing Home Care." *American Journal of Public Health*, vol. 75, no. 7, July 1985, pp. 758-762.

Objective: To determine the relationship between admission to a nursing home and subsequent outcomes.

Methods: A random sample of 563 patients discharged during 1980 from a stratified random sample of 24 skilled nursing facilities in the San Bernardino-Riverside Standard Metropolitan Statistical Area of southern California was selected for the study. Patient data were abstracted from medical records. Telephone interviews were used to collect post-discharge information on the time period after the patient's discharge until the time of their death or December 31, 1982.

Results: Of the patient sample, 30 percent died in the nursing home, 28 percent were discharged home or to other community residences, 7 percent were transferred to another SNF, and 36 percent were transferred to a hospital. Two years later, 129/563 (24 percent) were still alive.

Conclusions: The authors found that while social support was only moderately predictive of discharge status, mental orientation, urinary continence, functional status, hip fracture, and diagnosis associated with dementia were significant predictors of discharge status and status after two years. Although this study does provide some information on expected discharge status from skilled care, the data are old and more recent changes in patient care practices and the delivery system may alter the study findings.

Citation: Lui, Korbin, Douglas Wissoker, and Carolyn Rimes. "Determinants and Costs of Medicare Post-Acute Care Provided by SNFs and HHAs." *Inquiry*, vol. 35, spring 1998, pp. 49-61.

Objective: To study the effects of beneficiary, market, and policy factors on the costs and uses of post-acute care.

Methods: At the baseline interview in 1991, the sample consisted of 3,379 people, ages 65 and older who were enrolled in both Medicare Parts A and B, did not have end-stage renal disease, and were not in a managed care plan. For the analysis of skilled nursing facility vs. home health agency use, the sample consisted of 1,195 people who used either service after a hospital stay. Logit and ordinary least squares (OLS) models were used to analyze nationally representative data from the 1991 Medicare Current Beneficiary Survey (MCBS) on patient characteristics, the 1992-1993 Medicare claims data on the uses and costs of SNF and HHA services, and the Medicare and Medicaid Automated Certification System (MMACS). Medicaid variables from various sources were also analyzed.

Results: Several factors were found to be associated with SNF use including increased age, increased functional disability, a higher number of Medicare rehabilitation beds per 1,000 enrollees, and a diagnosis of hip fracture or stroke. Being married, nonwhite, and having a Medicare supplemental insurance policy were associated with a lower rate of SNF use.

Conclusions: This article provides some insight into the types of patients for whom access to care will be affected most by the new prospective payment system for skilled nursing facilities. The results also show that SNF and HHA services are not necessarily substitutable for all postacute care users. Because of the interactions between Medicare and Medicaid, how states respond to the policy changes in Medicare will determine the total amount of publicly financed services available to dually eligible beneficiaries. Finally, the findings suggest that it will be difficult to identify factors to risk-adjust episode costs, particularly in the design of postacute payment systems that attempt to integrate multiple modalities of services.

Citation: Mamon, Joyce, Donald M. Steinwachs, Maureen Fahey, Lee R. Bone, Julianne Oktay, and Lawrence Klein. "Impact of Hospital Discharge Planning on Meeting Patient Needs after Returning Home." *Health Services Research*, vol. 27, no. 2, June 1992, pp. 155-175.

Objective: To examine the contribution of hospital discharge planning with respect to meeting the needs of patients for care after they return home.

Methods: A random sample of 919 patients (age 60 or over) admitted to five hospitals was studied to obtain information about the characteristics of their discharge planning. A discharge planning questionnaire was completed by the appropriate staff member at the hospital. The questionnaire recorded information on whether a patient assessment had been done and if a case had been opened. Medical record data was also included. Patients were surveyed two weeks after their discharge. They were asked about their care needs related to treatment, activity limitations, and self-sufficiency limitations. Patients were also asked if their needs were or were not met.

Results: Two weeks after discharge, 97 percent of patients reported that they had one or more needs for care. Of these, 33 percent reported that at least one of their needs was not being met.

Discharge planning resulted in a significant reduction in unmet treatment needs, but had no impact on activity limitations, self-sufficiency needs, or other overall needs. Interdisciplinary discharge planning did not seem to have a significant effect on needs.

Conclusions: This study suggests that discharge planning by a case manager has a positive effect on treatment needs. However, the results also show that many patients had needs that were unmet by the home care arrangements made by their case manager. It is possible that many of these patients may have benefitted from a higher level of care.

Citation: Markson, Lawrence, Marilyn Pajk, Keith Champney, and Knight Steel. "Pilot Study of the Appropriateness of Post-Hospital Care Received by Medicare Beneficiaries: Clinical Case-by-Case Review." Boston, MA: Geriatrics Section, Boston University Medical Center, 1989.

Objective: To refine automated guidelines for postacute *home health care* by comparing the level of care specified by the guidelines to that deemed minimally adequate by clinical reviewers.

Methods: Guidelines were developed through expert consensus (described in a separate report, which we do not yet have available). There are 45 separate guidelines for patients discharged from acute care to home health care. To use the guidelines, trained abstractors first abstracted patients' hospital charts into a computerized database. The guidelines were then applied to the computerized data. Elements in patients' records "tripped" specific guidelines. For example, "New insulin-dependent diabetic with no education in the hospital" or "patient/caregiver unable to administer insulin," would have tripped a guideline for diabetic care, which would have then specified the timing of the first home health visit, the content of the home health care, and the total number of home health visits.

In this report, two clinicians each independently reviewed 100 patients' charts and decided if they agreed with the standards of care recommended by the guidelines, and whether adverse events, if any, could be related to deficiencies in care as defined by the guidelines.

Results: The goal of this report was to describe in detail those cases in which there was disagreement between the clinician reviewers and the guidelines, so the report did not present statistics on agreement and reliability. It appears, however, that there was reasonably good agreement between the guidelines and the clinicians.

Conclusions: The results of this study are somewhat encouraging. Although the study was on guidelines for home health care, the guidelines in the study, as in the current project, focused on "minimally adequate levels of care." Many of the guidelines appear to be relevant to the skilled nursing facilities setting as well. While many of the guidelines rely on chart information that is not available in administrative data, it appears that some guidelines may be able to be utilized.

Citation: Meehan, T.P., J.M. Chua-Reyes, J. Tate, K.M. Prestwood, J.D. Scinto, M.K. Petrillo, and M.L. Metersky. "Process of Care Performance, Patient Characteristics, and Outcomes in Elderly Patients Hospitalized with Community-Acquired or Nursing Home-Acquired Pneumonia." *Chest*, vol. 117, no. 5, May 2000, pp. 1378-1385.

Objective: To compare the process of care performance, patient characteristics, and outcomes in a cohort of elderly patients hospitalized with community-acquired pneumonia (CAP) or nursing home-acquired pneumonia (NHAP).

Methods: Medical records and other hospital data were collected on a retrospective cohort of patients hospitalized in 34 acute care hospitals in Connecticut during 1995 and 1996. Data were collected on antibiotic administrations within eight hours of hospital arrival, blood culture collection within 24 hours of hospital arrival, oxygenation assessment within 24 hours of hospital arrival, demographic and clinical characteristics, in-hospital complications, mortality, and length of stay.

Results: The process of care performance rates for patients with CAP and NHAP were equivalent for antibiotic administration within 8 hours of hospital arrival, blood culture collection within 24 hours of hospital arrival, and oxygenation assessment within 24 hours of hospital arrival. However, patients with CAP were younger than those with NHAP, had less cerebrovascular disease, and lower mortality risk scores at hospital presentation. The median length of stay was equivalent, but the in-hospital mortality rate was lower in patients with CAP than in patients with NHAP.

Conclusions: The quality of care given to patients with CAP was equivalent to that given to patients with NHAP. However, patients with NHAP were more likely to have poor outcomes as compared with patients with CAP. The authors concluded that this was because patients with NHAP were older and more acutely ill at the time of presentation. Although NHAP is considered a subtype of CAP, this study suggest that clinical practice guidelines for the treatment of CAP may not take into account the clinical needs of patients with NHAP.

Citation: Morrow-Howell, Nancy, and Enola Proctor. "Discharge Destinations of Medicare Patients Receiving Discharge Planning: Who Goes Where?" *Medical Care*, vol. 32, 1994, pp. 486-497.

Objective: To identify and rank factors influencing the discharge destinations of patients who received discharge planning services before leaving the hospital.

Methods: Prospective, nonrandomized study. Medicare patients who received diagnosis of congestive heart failure (CHF), cerebral vascular accident (CVA), or hip fracture from a large, urban teaching hospital in the Midwest and received discharge planning services from the social work department. A reference group of Medicare patients from the general medicine unit was included as well. Data were abstracted from medical records and interviews with discharge planners. Discharge destination (home, nursing home, rehabilitation unit, or other) was related to financial, social, and medical variables through polytomous logistic regression.

Results: Discharge to a nursing home (vs. home) was strongly and positively related to dependency at discharge, mental impairment, Medicaid eligibility, and the ability to pay privately for nursing home care.[2] Discharge to a nursing home was negatively and significantly related to marital status and African-American race. There was *no* significant association between any of the three diagnostic categories and nursing home placement. Discharge to a rehabilitation unit vs. home was positively related to dependency at discharge, and to diagnoses of hip fracture or CVA. There was a negative association between ability to pay privately for nursing home care and discharge to a rehab unit.

Conclusions: Medicare patients' placement at discharge is a function of social situations, medical need, individual preference, and financial resources.

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[2] Inferences regarding Medicaid status are problematic. There is no indication that the investigators removed from the sample those individuals who had entered the hospital from a nursing home. Medicaid status may turn out to be a good proxy for having been in a nursing home prior to hospital admission.

Citation: Mukamel, Dana B. "Risk-Adjusted Outcome Measures and Quality of Care in Nursing Homes." *Medical Care*, vol. 35, no. 4, 1997, pp. 367-385.

Objective: To examine the use of the Patient Review Instrument (PRI), a reimbursement reporting system used by the New York State Department of Health, to assess quality of care based on five risk-adjusted outcomes.

Methods: PRI data for all residents in approximately 550 nursing homes in upstate New York from 1986 through 1990 were used to develop the five risk-adjusted outcome measures. A PRI form is completed for every nursing home patient every six months and for most new patients within three months of admission. The PRI includes demographic and payer information, resource utilization groups (RUGs), and other information about specific medical conditions, specific medical treatments, and functional status.

The risk-adjusted outcome measures were: rates of decline in functional status of activities of daily living (ADL), rates of increases in severity of decubitus ulcers, physical restraints rates, dehydration rates, and rates of major accidents.

Results: Measures based on ADL decline, deterioration in decubiti, and physical restraints rates met all validity criteria and were significantly correlated with deficiency citations. Measures based on accident rates and rates of dehydration, however, did not perform as well. There was a significant amount of variation in these quality measures across regions and between for-profit and nonprofit nursing homes. Because different aspects of quality require different inputs, nursing homes choose to trade off one aspect of quality for another. For example, for-profit nursing homes had significantly worse outcomes for deterioration in decubitus and physical restraints, significantly better outcomes for dehydration rates, and no significant difference in ADL, accident rates, and number of deficiencies.

Conclusions: Valid risk-adjusted outcome measures of quality can be developed based on data collected for reimbursement purposes. The study found a positive correlation between the risk-adjusted outcome measures and the average number of deficiency citations per annual survey, which represents a benchmark for quality.

The article provides a useful starting point for identifying quality indicators using reimbursement data. More research is needed to replicate the performance of these indicators and to validate them through comparisons with other benchmarks for quality, including implicit and explicit reviews of patient care. However, PRI data are not available for all Medicare skilled nursing facility patients.

Citation: Naughton, Bruce J. and Joseph M. Mylotte. "Treatment Guideline for Nursing Home-Acquired Pneumonia Based on Community Practice." *Journal of the American Geriatrics Society,* vol. 48, 2000, pp. 82-88.

Objective: To describe the findings of a retrospective study of the treatment of nursing home-acquired pneumonia (NHAP) in 11 nursing homes in one community and the development of a treatment guideline for NHAP using data from the retrospective study.

Methods: A retrospective chart review of 239 episodes of NHAP occurring between November 1, 1997, and April 30, 1998, was performed. Data regarding antibiotic treatment of NHAP were used to revise a treatment guideline developed by the authors. Further refinements of the guideline were made based on small group discussions with physicians and nurse practitioners caring for the study population.

Results: Of the 239 episodes of NHAP, 171 (72 percent) were initially treated in the nursing home. Of these 171 patients, 105 (61 percent) were treated only with an oral regimen, whereas 66 (39 percent) were treated initially with an intramuscular antibiotic and subsequently with an oral regimen. There was no significant difference in 30-day mortality rates between those initially treated in nursing homes (22 percent mortality) and those initially treated in hospitals (31 percent mortality). Neither was there a difference in 30-day mortality rates between those initially treated with an oral regimen in the nursing home (21 percent) versus those initially treated with an intramuscular antibiotic in the nursing home (25 percent).

Recommendations from the guideline include:

Treatment in the Nursing Home:

1. Route of initial therapy (parenteral [IM] or oral [PO]): Treatment with a IM agent should be considered if there is no response to the oral agent, vital signs are abnormal, or if the resident has an acutely altered mental status and is unable to take oral medications (tube feeding not available).

2. Choice of parenteral agent: Ceftriazone 500-1000 mg IM QD or Cefotaxime 500 mg IM Q12H. In the penicillin-allergic person the type of hypersensitivity (rash, hives) should be considered in making a treatment decision.

3. Timing of the switch to an oral agent: Residents given IM treatment should be switched to an oral agent when they achieve clinical stability. In most (75 percent) residents, this will occur on day 3 to 5 of treatment. Clinical stability is defined as all of the following being present: (1) improvement in signs and symptoms, (2) afebrile (<100.5F) for ≥ 16 hours, (3) no acute cardiac or other life-threatening event in the first three days of treatment, and (4) resident is able to take oral medication.

4. Oral antibiotic regimens: amoxicillin, amoxicillin/clavulanate, second or third generation oral cephalosporin (in the penicillin-allergic patient, levofloxacin),

5. Duration of therapy 7 to 10 days.

Treatment in the Hospital:

1. Choice of empiric therapy: ceftriaxone 500 to 1000 mg IV QD, cefotaxime 500 mg IV Q8 to 12 H, ampicillin/sulbactam 1.5 gm IV Q6 to 8H., cefuroxime 750 mg IV Q8H (In the penicillin-allergic person the type of hypersensitivity (rash, hives) should be considered in making a treatment decision. An alternative to consider is levofloxacin 500 mg IV QD).

2. Intravenous erythromycin should be avoided because of adverse effects such as pain and phlebitis and increasing resistence of pneumococci to macrolides.

3. Timing of switch to an oral agent: When the resident achieves clinical stability (day 4 to 6), he or she can be switched to an oral agent—amoxicillin, amoxicillin/clavulante, second or third generation cephalosporin.

4. In the penicillin-allergic patient, one of the following agents can be used: levofloxacin 500 mg PO QD, erythromycin.

5. Duration of therapy: 7 to 14 days.

If renal insufficiency is present, dosage adjustments are necessary for agents that are excreted via the kidney. These agents include most penicillins, cephalosporins, and levofloxacin. Ceftriaxone does not require doseage adjustments for renal insufficiency until the creatinine clearance decreases to less than 20cc per hour.

Note that the guideline does not recommend the use of a macrolide or trimethoprim/sulfamethoxazole in those with penicillin allergy because of increasing resistance of *Streptococcus pneumoniae* in the community to these agents, especially to trimethoprim/sulfamethoxazole.

Conclusions: The study does not evaluate whether treatment provided according to the recommendations in the developed guideline actually improved patient outcomes or reduced variations in outcomes. This guideline has not been endorsed or adopted by any professional body. The sample size of the original study was very small.

Citation: Neu, C.R., Scott C. Harrison, and Joanna Z. Heilbrunn. *Medicare Patients and Postacute Care: Who Goes Where?* Santa Monica, CA: RAND, November 1989.

Objective: To document which Medicare patients receive postacute care and which do not; to identify factors that may explain some of the variations in utilization; and to assess the effect of postacute care (or lack thereof) on medical outcomes.

Methods: Tabular and regression analyses (using Medicare billing records, provider-specific files on individual hospitals, the Area Resource File compiled by the National Center for Health Statistics and Medicare provider files, as well as other sources) were performed using data from a 20 percent random sample of all Medicare discharges from acute care hospitals during the 12 months ending in June 1985.

Results: About three percent of all Medicare patients used skilled nursing facility care, about 15 percent used home health care, and about 0.5 percent used rehabilitation care. Patients with stroke, major joint disorders, and hip and femur procedures except major joint were more likely to use postacute care than patients with chronic obstructive pulmonary disease or heart failure. SNF patients tended to be female and much older than those using other forms of postacute care for all five of the diagnostic related groups studied. Whites were more likely to use SNF care than blacks; blacks were more likely to use home health care than whites.

Government hospitals were less likely to refer patients to all kinds of postacute care than privately controlled hospitals. Hospitals with disproportionate shares of low-income patients seemed slightly less likely to refer patients to SNF care but more likely to refer patients to home health care. Use of postacute care was uniformly higher among patients discharged from urban hospitals than rural hospitals. SNF care utilization is highest for hospitals with 49-217 beds (as opposed to smaller or larger hospitals) in both urban and rural settings. This may be because SNF care is not available for patients who are discharged from small rural hospitals, while large hospitals are more likely to have their own facilities. Hospitals with teaching programs were also more likely to discharge patients into SNFs and rehabilitation care.

The vast majority of readmissions to acute care hospitals (from postacute care) were reassigned to DRGs other than those of their original hospital stays. Readmission rates were higher for patients who spent less than a week in an SNF or in rehabilitation care and for those who received fewer than seven home health visits.

Conclusions: The most striking finding was that factors other than medical needs for care significantly influenced whether and where a Medicare beneficiary received postacute care. This study provides insight into patient-, hospital-, and geographic-level characteristics that are important to consider in analyzing the effect of the prospective payment system on access to SNF care for certain subpopulations.

Citation: O'Neil, Margaret B., Melanie Woodard, Virginia Sosa, Lori Hunter, Cynthia D. Mulrow, Meghan B. Gerety, and Michael Tuley. "Physical Therapy Assessment and Treatment Protocol for Nursing Home Residents." *Physical Therapy*, vol. 72, no. 8, August 1992, pp.596-604.

Objective: To describe a standard protocol for assessing physical function in elderly nursing home residents and to present a practical, functionally prioritized treatment model based on the assessment.

Methods: A literature review and the consensus of three experienced physical therapists was used to develop the standard assessment protocol. A treatment protocol was then developed from the assessment protocol and tested on 20 patients.

Results: The authors suggest that physical therapists should prioritize treatment procedures so they are focused on two to three short-term goals. They feel that this will allow the optimal use of treatment time so that the patient's functional recovery can be maximized.

Treatment usually begins with general conditioning training including range of motion exercises and then strengthening and endurance exercises. The treatment will then progress to exercises for balance and coordination training. When patients have attained their goals for general conditioning, they progress to functional activity training including bed mobility training, transfer training, and stance training. With these goals attained, therapy focuses on wheelchair or locomotion training.

Conclusions: The authors conclude that their protocol is a promising framework from which a reproducible, prioritized physical therapy program can be developed. They state that this treatment protocol is especially useful for elderly patients because these patients typically have decreased physical endurance and multiple impairments that may require extensive treatments. This paper provides a useful overview and framework for understanding physical therapy practice. It is not clear from the literature if this protocol has been further refined since its publication or if it has been more widely adopted.

Citation: Phillips, Barbara R. *A Pilot Study the Adequacy of Post-Hospital Community Care for the Elderly: Final Report.* Prepared for the Health Care Financing Administration, Office of the Assistant Secretary for Planning and Evaluation, Department of Health and Human Services. Princeton, NJ: Mathematica Policy Research, Inc., September 1989, revised January 12, 1990.

Objective: To develop, test, and refine an objective methodology for assessing the adequacy of post-hospital care in the community and the health consequences of inadequate care.

Methods: Draft guidelines for 45 distinct conditions developed in conjunction with the staff of the Geriatrics Section of the Boston University Medical Center were reviewed by a consensus panel. The guidelines were revised based on the panel's comments and pretested for a sample of patients recently discharged from the hospital.

In addition to the guidelines, a sample of 100 patients was used to investigate the relationship between inadequate care and adverse outcomes. Data were derived from two primary sources: (1) hospital medical records, and (2) telephone interviews with patients and their caregivers conducted two and six weeks after hospital discharge. Services were compared with the guideline specifications to determine whether the care that the patient received did not meet guidelines.

Results: Guidelines had been incorrectly applied in a substantial number of the 100 cases that they reviewed. Most of the cases in which decision rules differed involved cases in which information on functioning in the medical record and the interview was inconsistent. Between 72 and 81 percent of the post-hospital community care needs of Medicare patients were met under the guidelines.

Conclusions: This preliminary study suggests that access to adequate post-hospital care is a relatively serious problem for Medicare patients discharged to the community. It appears that, as measured by the guidelines, about 20 to 25 percent of the post-hospital care needs of Medicare patients discharged to the community were not being met, and that most of these needs involved skilled care. This need for additional post-hospital care appears to be fairly widespread; slightly less than half of the Medicare patients discharged to the community appeared to need some additional care. However, most of the patients who needed additional care did not appear to suffer adverse outcomes due to an unmet need for care. Approximately 15 to 20 percent of Medicare patients discharged to the community appeared to have suffered adverse outcomes. Most of the adverse outcomes observed in this study were morbidities that were not serious enough to require physician or emergency room visits or readmission to a hospital.

Citation: Phillips, Charles D., John M. Morris, Catherine Hawes, Brant E. Fries, Vincent Mor, Marianne Nennstiel, and Vincent Iannacchione. "Association of the Resident Assessment Instrument (RAI) with Changes in Function, Cognition, and Psychosocial Status." *Journal of the American Geriatric Society*, vol. 45, 1997, pp. 986-993.

Objective: To evaluate the impact of the Resident Assessment Instrument (RAI) on changes in nursing home residents' functional status, cognitive status, and psychosocial well-being.

Methods: The study used a quasi-experiment design involving the collection of longitudinal data on two cohorts of nursing home residents. One cohort was assessed before the implementation of the RAI, and the other was assessed after the implementation of the new assessment process. Over 2,000 nursing home residents in 267 nursing homes located in 10 geographic areas were assessed during the pre-RAI period. In the post-RAI period, 2,000 new residents in 254 of the same facilities were assessed. The two cohorts were demographically similar.

Activities of daily living (ADL) function, cognitive performance, urinary incontinence, bowel incontinence, making oneself understood, understanding others, social engagement, mood, and problem behaviors were the nine outcomes (all based on Minimum Data Set items) of interest in this study.

Results: Implementation of the RAI significantly reduced the rate of decline in seven of the nine outcomes under consideration (i.e., ADL index, urinary incontinence, bowel incontinence, cognitive performance, being understood, understanding others, and social engagement). Reductions in improvement were also observed in all outcomes. In activities of daily living, social engagement, and cognitive function, the reduced decline far outweighed any reductions in improvement. In mood problems, problem behaviors, and understanding others, reductions in improvement were greater than any reductions in decline. Changes in the rates of decline and improvement were not uniform across all residents.

Conclusions: The RAI may have improved the quality of care for nursing home residents by reducing overall rates of decline in some areas of resident function. However, this may have generated trade-offs in that it may have reduced improvement rates in other areas of function. The article presents some interesting evidence on the effects of the RAI on resident outcomes, especially the fact that some areas may have improved at the expense of others. This trade-off is likely to be attributable to resource constraints, so it will be important to assess any changes that may have occurred since the implementation of the PPS. RAI implementation may have focused staff's attention on specific subpopulations. Revisions to the RAI are needed to assist staff in generalizing their efforts to all residents and to increasing improvement rates, especially in areas related to mood and behavior.

Citation: Phillips, Charles D., David Zimmerman, Roberto Bernabei, and Palmi V. Jonsson. "Using the Resident Assessment Instrument for Quality Enhancement in Nursing Homes." *Age and Aging,* vol. 26, no. S2, 1997, pp. 77-81.

Objective: To demonstrate how quality might be measured and compared using the Resident Assessment Instrument (RAI).

Methods: Cross-sectional data were collected from certified nursing homes in Kansas (n=365), Copenhagen (n=66), Reykjavik (n=11), and Genoa (n=16). The investigators chose eight indicators of quality that could be derived from single assessments: (1) presence of any contracture, (2) presence of any level of pressure ulcer, (3) a fall within 30 days prior to the assessment, (4) significant weight loss prior to the assessment, (5) presence of depression with no evidence of antidepressants or psychological treatments, (6) any use of physical restraints, (7) any use of antipsychotic medications and/or sedatives/hypnotics, and (8) little no involvement in activities.

Results: There was great variation in performance, but overall, no one site had particularly better or worse performance on the quality indicators than any of the others. Generally, if a site scored low on one indicator, it was high on another.

Conclusions: The RAI database can measure quality of care. The RAI provides a common language to describe the needs and strengths of the elderly receiving care in a variety of settings.

Citation: Pothoff, Sandra, Robert L. Kane, and Sheila J. Franco. "Improving Hospital Discharge Planning for Elderly Patients." *Health Care Financing Review*, vol. 19, no. 2, winter 1997, pp. 47-72.

Objective: This article reviews the process of hospital discharge planning, points out gaps in knowledge, and suggest improvements using a decision or management sciences framework.

Methods: The authors performed site visits to 10 hospitals to better understand the discharge planning process.

Results: The authors divide the discharge planning process into six steps: (1) screening, (2) assessment, (3) choosing the postacute care (PAC) modality, (4) choosing the PAC vendor, (5) implementation of the PAC plan, and (6) evaluation of the PAC plan. Our main interest is in the third step--choosing the PAC modality. The authors note that optimal decision making at this step would be informed by patient and family preferences and scientific data on the outcomes various of types of patients treated in different PAC settings. They observe, though, that patient and family preferences are rarely systematically assessed, and that scientific data comparing outcomes of different PAC settings are lacking. They also point out that, ideally, consideration of PAC options should occur only after patient assessment and determination of needs, but that, in reality, with hospital financial pressures to discharge patients quickly, discharge planners focus too quickly on a narrow set of options without considering how other options might fill patients' needs.

Conclusions: The authors provide similar analyses of the other remaining steps in the discharge planning process. The article concludes by suggesting that the discharge planning process could be improved through structured, computerized data collection for each step (screening, assessment, and so on), and integration of the collected data at the patient level to facilitate analysis. The authors also call for the development of decision-support systems to help discharge planners, patients, and families make better decisions, and additional research to study the benefits and risks of each PAC setting for different types of patients.

Citation: Rantz, Marilyn J., Gregory F. Petroski, Richard W. Madsen, Jill Scott, David R. Mehr, Lori Popejoy, Lanis L. Hicks, Rose Porter, Mary Zwygart-Stauffacher, Victoria Grando. "Setting Thresholds for MDS Quality Indicators for Nursing Home Quality Improvement Reports." *The Joint Commission Journal on Quality Improvement*, vol. 23, no. 11, November 1997, pp. 602-611.

Objective: To establish "meaningful" thresholds for a selected group of Minimum Data Set quality indicators (QIs) beyond merely using group averages, which can be misleading.

Methods: The guideline was developed using expert consensus. The authors first selected 13 MDS QIs. Through an iterative Delphi process, a panel of 13 experts on nursing home care from various backgrounds arrived at thresholds for each indicator. The panelists were instructed to formulate their scores using their "experience and expertise with the general nursing home population *(that is, excluding residents in hospital-based or freestanding subacute nursing care units.)*" [emphasis mine]. Thus, some QIs may not apply to the postacute population.

Results:

Quality Indicator	Good Threshold	Poor Threshold
Prevalence of any injury	4	11
Prevalence of falls	5	15
Prevalence of problem behavior toward others	11	34
Use of nine or more scheduled medications	10	30
Prevalence of bladder or bowel incontinence	37	60
Bladder or bowel incontinence without a toileting plan	7	28
Prevalence of indwelling catheters	2	9
Prevalence of fecal impaction	1	6
Prevalence of weight loss	6	15
Prevalence of bedfast residents	2	12
Prevalence of daily physical restraint	2	9
Prevalence of little or no activity	20	54
Prevalence of stage I-IV pressure ulcers	3	11

Citation: Rantz, Marilyn, Lori Popejoy, David Mehr et al. “Verifying Nursing Home Care Quality Using Minimum Data Set Quality Indicators and Other Quality Measures.” *Journal of Nursing Care Quality*, vol. 12, 1997, pp. 54-62.

Objective: To verify Minimum Data Set-based Quality Indicators as measures of nursing home quality.

Method: Minimum Data Set (MDS)data from 1994 and 1995 were used to construct 14 Quality Indicators (QIs) for Missouri nursing homes. Using these indicators, 124 Missouri nursing homes were identified as performing poorly and 35 were identified as performing well. Five homes identified as performing poorly and five identified as performing well were visited by a research nurse who was blind to the homes' QI performance results. The nurse assessed each facility using three instruments: a QI Observation Instrument, a QI Observation Scoring Instrument, and an Independent Observable Indicators of Quality Instrument. State survey citations for homes in each group for 1994-1995 were tabulated as well.

Results: There was a strong association between MDS QI scores and scores from the independent observation instruments that did not rely on the MDS. Homes with good MDS-based QI scores exhibited mean values of 3.6 on the QI Observation Scoring Instrument and 2.7 on the Independent Observable Indicators of Quality Instrument. Homes with poor MDS-based QI scores exhibited means of 8.2 and 12.9 on the two instruments, respectively.

Conclusion: Quality indicators derived from the MDS appeared to discriminate well between nursing homes with good and poor quality.

Citation: Rantz, Marilyn J., Lori Popejoy, Mary Zwygart-Stauffacher, Deidre Wipke-Tevis. and Victoria T. Grando. "Minimum Data Set and Resident Assessment Instrument: Can Using Standardized Assessment Improve Clinical Practice and Outcomes of Care?" *Journal of Gerontological Nursing*, June 1999, pp. 35-43.

Objective: To provide historical information, to describe the importance of standardized assessment, and to suggest the Minimum Data Set (MDS) and the Resident Assessment Instrument (RAI) should be viewed as critical tools to improve care and care outcomes, not simply as a regulatory requirement.

Methods: Essay.

Discussion: The RAI was developed to improve resident quality of care by carefully assessing functional, medical, mental, and psycho-social status on admission and periodically thereafter. Standardized assessment data should provide management information to track case mix of residents, allocate resources, and evaluate quality of care.

Assessment is the first step in the nursing process and serves as a foundation for selecting appropriate interventions to improve, maintain, or support residents. There are four steps to the RAI process: (1) assess using the MDS, (2) conditions present on the MDS, trigger nurse to do further assessment using Resident Assessment Protocols (RAPs), (3) document decision to proceed or not proceed with plan of care based on RAP assessment, and (4) comprehensive care plan based on MDS/RAP assessments.

The MDS is being used to set payment rates for all us residents receiving Medicare Part A benefits and for some residents receiving Medicaid benefits in some states. Payment is based on Resource Utilization Groups (RUGs) calculated from the MDS. A set of quality indicators has also been derived from the MDS.

Conclusions: The strength of the RAI process is that it is routine, interdisciplinary, and a standardized assessment process that is sensitive to changes in resident functioning, health, and well-being. Another strength of the RAI is the comprehensive, although not all-inclusive range of assessment items and clinical information provided in the RAPs.

To fully utilize the RAI, the MDS items need to be coded accurately and appropriately. The weaknesses of the RAI result from the difficulty many nursing facilities have in developing systematic assessments, care planning, and care delivery procedures. This is especially true in facilities with high staff turnover. The potential of the RAI process is also limited by the low ratio of RN to patient contact time. In addition, many facilities have the MDS nurse complete all assessments. This removes the interdisciplinary aspect of the RAI and means that the RAI cannot be updated as frequently as they should.

Citation: Resnick, Neil M., Gary H. Brandeis, Margaret M. Baumann, and John N. Morris. "Evaluating a National Assessment Strategy for Urinary Incontinence in Nursing Home Residents: Reliability of the Minimum Data Set and Validity of the Resident Assessment Protocol." *Neurology and Urodynamics*, vol. 15, 1996, pp. 583-598.

Objective: To determine the reliability of the Minimum Data Set (MDS) and the accuracy of the Resident Assessment Protocol (RAP) in predicting the lower urinary tract cause of incontinence.

Methods: Thirteen nursing homes in five states participated in the study. Twenty-six nurses from the staff of these nursing homes were trained to administer the MDS and RAP. The nurses completed the MDS questions on incontinence for a total of 123 residents. Weighted kappa intra-correlation coefficients were calculated to determine the reliability of the MDS incontinence items. To determine the validity of the RAP, the nurses evaluated 102 women with incontinence using the RAP. The RAP results were compared to the women's actual urodynamic diagnostic measurements.

Results: The reliability of the MDS incontinence items was high with interrater correlation coefficients between .68 and .91. The RAP was successfully administered to 80 percent of the sample and its validity was 70 percent.

Conclusions: This article confirms the reliability of the MDS incontinence questions and the validity of the incontinence RAP. The authors point out that the MDS and RAP need to be administered by trained staff. The MDS and RAP together provide a useful, stepwise, and non-urodynamically based strategy to guide evaluation and therapy of incontinence in this setting. The use of the incontinence RAP provides nursing home patients with greater access to treatment in a setting where urodynamic testing required to treat incontinence would not usually be available.

Citation: Saliba, Debra, Raynard Kington, Joan Buchanan, Robert Bell, Mingming Wang, Martin Lee, Michael Herbst, Daniel Lee, Denise Sur, and Lisa Rubenstein. "Appropriateness of the Decision to Transfer Nursing Facility Residents to the Hospital." *Journal of the American Geriatrics Society*, vol. 48, 2000, pp. 154-163.

Objective: To develop and test a standardized instrument, the purpose of which is to assess (1) whether skilled nursing facilities (SNFs) transfer residents to emergency departments (EDs) inappropriately, (2) whether residents are admitted to hospitals in appropriately, and (3) factors associated with inappropriate transfers.

Methods: Used a nested random sample in eight community SNFs, the authors identified the SNF and hospital records of 100 unscheduled transfers to one of ten hospitals. They conducted a structured implicit review of the patients' medical records. Seven physician reviewers assessed appropriateness using a review form designed for this study. Two physicians reviewed each record. The authors measured interrater reliability with kappa statistics and used bivariate analysis to identify factors associated with inappropriate transfer.

Results: In 36 percent of ED transfers and 40 percent of hospital admissions, both reviewers agreed that the transfer or admission was inappropriate and that the resident could have been cared for at a lower level of care. When advance directives were considered, both reviewers rated 44 percent of ED transfers and 45 percent of admissions inappropriate. Factors associated with inappropriateness included the perceptions that: (1) poor quality of care contributed to transfer need, (2) needed services would typically be available in outpatient settings, and (3) the chief complaint did not warrant hospitalization.

Conclusions: The authors concluded that inappropriate transfers are a potentially large problem. In addition, some inappropriate transfers may be associated with poor quality care in SNFs. The authors point out that this study was done before the implementation of SNF prospective payment. They state that under prospective payment, SNF have a financial disincentive to provide increased services for residents who develop a new or worse illness. They imply that SNFs will be more likely to inappropriately transfer patients under prospective payment and that the rate of SNF transfer should be closely monitored. It would be difficult to translate their methodology for assessing inappropriate transfer into criteria that can be measured using administrative data because the medical record contains information on the decision making process that the Minimum Data Set and claims data do not.

Citation: Sgadari, Antonio, John M. Morris, Brant E. Fries, Gunnar Ljunggren, Palmi V. Jonsson, Jean-Noel DuPaquier, and Marianne Schroll. "Efforts to Establish the Reliability of the Resident Assessment Instrument." *Age and Aging*, vol. 26, no. S2, 1997, pp. 27-30.

Objective: To measure the interrater reliability of a core set of Resident Assessment Instrument (RAI) items in several languages and countries: Denmark, Iceland, Italy, Japan, Sweden, Switzerland, and the U.S. The RAI forms the basis of the Minimum Data Set.

Methods: In the U.S. sample, a stratified random sample of patients was selected from the 13 participating nursing facilities. Comparison was made between RAIs completed by two nurses independently evaluating the same residents one week apart. There were a total of 123 RAIs completed. Reliability was measured using the weighted kappa (κ) statistic. The authors use Fleiss's guidelines that kappas in the range of 0.40-0.75 are considered "adequate," and kappas > 0.75 are considered "excellent."

Results: Eighty-eight percent of the more than 300 RAI items achieved a kappa of 0.4 or higher. Approximately 34 perecent of the items had kappas of 0.75 or higher. The paper also presents mean kappas of the RAI items grouped into 13 domains (memory, cognition, hearing, communication, vision, ADL self-performance, ADL support provided, bowel and bladder continence, patient initiative, unsettled relationships, mood distress, behavior problems, and nutritional status). The mean kappas for each domain ranged from a low of 0.44 for mood distress to a high of 0.92 for ADL self-performance., Other domains achieving excellent reliability were cognition (κ=0.88), hearing (κ=0.84), ADL support provided (κ=0.87), and bowel and bladder continence (κ=0.91).

Conclusions: The majority of RAI items achieve adequate to excellent reliability. This is reassuring since, for our project, we are contemplating comparing RAI/MDS data across time periods, and we would like to know that observed differences are real and not due to random measurement error. The sample size for this reliability study is somewhat small and the authors do not present confidence limits for their reliabilities. I believe that there are formulas for calculating confidence limits, and we could possibly look them up and use them ourselves.

Citation: Schnelle, John F., Joseph G. Ouslander, Joan Buchanan, et al. "Objective and Subjective Measures of the Quality of Managed Care in Nursing Homes." *Medical Care*, vol. 37, 1999, pp. 375-383.

Objective: To compare medical care received by nursing home residents enrolled in HMOs with that received by those under fee-for-service, using both objective measures and individual perceptions.

Methods: The medical records of 215 HMO members and 187 fee-for-service enrollees residing in 20 nursing homes were abstracted to ascertain the quality of the medical response to reported fevers and falls. Residents and their families were subsequently interviewed about the adequacy with which their health care was managed by physicians and nurse practitioners, and about the frequency of primary provider visits.

Results: Nursing home residents who were members of HMOs were more likely to receive a physical examination after a fall or fever, were more likely to trigger a Resident Assessment Protocol (RAP) for falls, and were more likely to receive antibiotics and diagnostic tests for fever than were those who received care under fee-for-service. The number of combined physician and nurse practitioner visits per month was also higher for HMO enrollees. Nevertheless, when asked whether they felt that their doctor saw them often enough or whether they were treated as well as they could have been for illness or injury, HMO and fee-for-service residents exhibited no statistically significant differences in their responses.

Conclusions: Consumer perceptions did not reflect objective differences in the care received by HMO and fee-for-service nursing home residents. At this point, the relationship between objective and subjective measures of care is poorly understood.

Citation: Siu, A.L., D.B. Reuben, J.G. Ouslander, and D. Osterweil. "Using Multidimensional Health Measures in Older Persons to Identify Risk of Hospitalization and Skilled Nursing Placement." *Quality of Life Research*, vol. 2, 1993, pp. 253-261.

Objective: To determine the ability of self-reported functional status measures to predict hospitalization or nursing home placement.

Methods: Identified new admissions over a 39-month period to a multilevel long-term care institution with separate residential care and skilled nursing sections. Baseline evaluations were done within six months of admission. Patients were reevaluated at least three months after the baseline.

Collected data for the Katz Activities of Daily Living (ADL) scale, Lawton-Brody Intermediate Activities of Daily Living (IADL) scale, SF-20, COOP charts, Tinetti Gait and Balance Measures, Williams test of timed manual performance, Physical Performance Test (PPT), and the Mini-Mental State Examination (MMSE).

Results: Of new admissions, 14 percent died or were placed in skilled nursing facility (SNF) care in the first six months before they could be evaluated. Another 44 percent refused or were unable to participate, and 41 percent participated and completed the baseline evaluation.

In multivariate analysis, ADL-IADL dependency, emotional function, and timed manual performance were significantly associated with risk of skilled nursing placement in the SF-20. While in the COOP model, ADL-IADL dependency, gait and balance test results, role function, and emotional function were predictive of skilled placement.

Changes in functional status measures between the baseline and follow-up periods were not associated with later placement in skilled nursing care except for timed manual performance.

Conclusions: The findings of this study highlight the clinical significance of emotional function in older adults. Emotional function was a stronger predictor of placement than measures of physical functioning (apart from ADLs). The authors conclude that multidimensional health measures provide useful predictive measures of skilled nursing home placement in institutionalized populations. However, much of the data needed to perform these measurements are not now included in administrative data sets.

Citation: U.S. Department of Health and Human Services, Office of Inspector General. *Early Effects of the Prospective Payment System on Access to Skilled Nursing Facilities*. Washington, DC: DHHS, August 1999.

Objective: To identify early effects of the Prospective Payment System on Medicare beneficiaries' access to skilled nursing facilities.

Methods: Hospital discharge planners from 200 randomly selected hospitals in eight states were contacted and asked about their ability to place Medicare patients in nursing homes as well as about changes to nursing home admissions practices. Between June 16, 1999 and June 25, 1999, 180 discharge planners were interviewed. Data from the Provider of Services (POS) and the National Claims History files were also analyzed.

Results: Sixty-six percent of discharge planners reported no difficulty in placing Medicare patients in nursing homes, but the number of Medicare patients who have extended lengths of stay in the hospital has increased since PPS.

Medicare data did not show any changes in the proportion or types of all Medicare discharges who went to SNFs between the first five months in 1998 prior to the implementation of the PPS, and the same five months in 1999 after the implementation of the PPS. Although the number of stroke patients discharged to SNFs has decreased by 1.4 percent, the total number of discharges to SNFs and the total number of Medicare beds increased since the PPS was implemented.

Half of all discharge planners reported some change in nursing home admissions practices as a result of the PPS. SNFs began asking for more detailed clinical information about patients and are placing more weight on the cost of care in making admissions decisions. About 20 percent said that nursing homes have been less willing to accept patients with certain medical conditions because of the PPS.

Patients who need extensive or complex services (intravenous feedings and medications, tracheostomy care, ventilator/respirator care, isolation, multiple diagnoses, and patients with behavioral problems) have become harder to place in SNFs; while patients requiring special rehabilitation have become easier to place. This may be because patients who need rehabilitation generally have short stays in SNFs, and because special rehabilitation has a high reimbursement rate under the PPS.

Conclusions: While some nursing homes may have modified their admissions practices, there is no direct evidence that Medicare patients are not receiving the SNF care they need as a result of the PPS. However, the authors caution that the results are preliminary, as the study only examined the early effects of the PPS. Moreover, the study relied on self-reported data that were not independently verified. Longer-term effects of the PPS will need to be monitored, as providers' policies and practices evolve in response to the new reimbursement system.

Citation: U.S. Department of Health and Human Services, Office of Inspector General. *Physical and Occupational Therapy in Nursing Homes: Medical Necessity and Quality of Care*. Washington, DC: DHHS. August 1999.

Objective: To determine the medical necessity and quality of physical and occupational therapy given to Medicare patients in skilled nursing facilities.

Methods: All March 1998 physical and occupational therapy claims submitted to SNFs in the continental United States. to fiscal intermediaries for payment were extracted from the Medicare Common Working File. Claims submitted before July 1, 1998 were purposely selected in order to maintain consistency in SNF and fiscal intermediary policies and procedures for the 12 months prior to the change in payment systems. Ten patients who received physical and/or occupational therapy during March 1998 were randomly selected from each of 24 SNFs. On-site reviews were conducted for 218 sampled patients at the 24 SNFs. Several teams of physical and occupational therapists reviewed the medical records. Structured medical review instruments were used to determine if each therapy was medically necessary, unnecessary, or undocumented.

Results: About 13 percent of physical and occupational therapy sessions were billed improperly by SNFs to Medicare. Almost 75 percent of improperly billed therapy sessions were not medically necessary. Some of these patients were not appropriate candidates for therapy; some of the treatment goals were too ambitious; therapy was, at times, too frequent and/or sessions were too long; and some therapists billed routine maintenance services as skilled therapy.

Conclusions: There is a need for improved quality in physical and occupational therapy in SNFs. Some of the problems arise from a lack of awareness or understanding of Medicare coverage and guidelines, while others may be the result of overutilization of therapy in SNFs in order to maximize Medicare reimbursement. The study raises some important concerns. Since the study was conducted before implementation of the prospective payment system, it will be important to examine how the new system affects the issues discussed in this report.

Citation: Wachtel, Tom J., Carol Derby, and John Fulton. "Predicting the Outcome of Hospitalization for Elderly Persons: Home Versus Nursing Home." *Southern Medical Journal*, vol. 77, no. 10, October 1984, pp.1283-1290.

Objective: To develop a tool to predict discharge destination (home or nursing home) for hospitalized elderly persons.

Methods: Retrospective data collections from the medical records of patients age 65 or over who were admitted to a large, university affiliated hospital during the calendar year 1979. A random sample of 50 patients discharged to a nursing home was compared to 50 patients discharged back to the community.

Results: Using data available at the time of admission, the most important predictors for men were the presence of a spouse at home, number of prior admissions, nervous system disorder (including stroke), and respiratory disorder. For women, the best predictors were previous admissions, mental disorder, and musculoskeletal disorder. When additional data from the hospitalization were added, the ability to perform activities of daily living (ADLs) and the number of medications at discharge became the most important predictive factors.

Conclusions: The authors concluded that for a man, a spouse at home reduces the likelihood of institutional placement, whereas for a women, a spouse does not. A relative (usually a child) in the elderly person's home did not influence discharge status as much as did a spouse. Thus, social support, which has been shown to be an important factor in maintaining the elderly in the community, seems to apply in our sample more to men supported by wives.

Multiple medications at admission, as a measure of complexity of therapy, seem to have a protective effect for men, but not for women. This suggests that men have a more supportive home environment than women. Wives or others may play an important role in the management of the men's therapy at home.

For both sexes, a complicated new drug regimen seems to predict nursing home placement, and the ability to performs ADLs becomes the most important factor influencing nursing home placement.

Citation: Zimmerman, David R., Sarita L. Karon, Greg Arling, Brenda Ryther Clark, Ted Collins, Richard Ross, and Francois Sanfort. "Development and Testing of Nursing Home Quality Indicators." *Health Care Financing Review*, vol. 16, no. 4, summer 1995, pp. 107-127.

Objective: To report on the development and testing of a set of indicators of quality of care in nursing homes using resident-level assessment data.

Methods: Essay.

Results: The authors describe the development of quality indicators (QIs), address the development of a quality-monitoring system (QMS), report on a pilot test of the QIs and the system, comment on methodological and current QI validation efforts, and conclude by raising further research and development issues.

A set of 175 QIs were organized into 12 care domains: accidents; behavioral and emotional patterns; clinical management; cognitive functioning; elimination and incontinence; infection control; nutrition and eating; physical functioning; psychotropic drug use; quality of life; sensory function and communication; and skin care.

The QMS is based on QIs that were derived from items on the Minimum Data Set Plus (MDS+), an enhanced version of the MDS. The MDS+ contains detailed longitudinal data on a resident's physical and cognitive functional status, acute medical conditions, nutritional status, behavior, and emotional status. It also includes limited information on various processes of care. A total of 32 pilot tests were conducted in Maine, Mississippi, and South Dakota using 31 QIs covering 11 of the 12 domains. On the basis of empirical analyses, clinical panel input, and the pilot tests, a QMS to be used in the multistate demonstration was developed.

Conclusions: This article discusses several important methodological issues important to the development of quality indicators including: (1) which types of assessments to use in interfacility comparisons; (2) the identification of risk factors; (3) which approach to take in adjusting risk; (4) setting a standard or threshold for performance above which a facility's performance is considered suspect; (5) minimizing the number of false positives and false negatives; and (6) establishing QI validity. Several directions for future work include setting thresholds, adjusting for risk, and aggregating the QIs into composite scores.

APPENDIX E

GUIDELINES ON STANDARD OF CARE

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GUIDELINES ON STANDARD OF CARE

Citation: American Physical Therapy Association. "Preferred Practice Pattern for Impaired Joint Mobility, Motor Function, Muscle Performance, and Range of Motion Associated with Bony or Soft Tissue Surgical Procedures." *Guide to Physical Therapist Practice,* Alexandria, VA: American Physical Therapy Association, Inc., 1999.

Objective: To describe the generally accepted elements of the patient/client management that the physical therapist provides for this patient/client diagnostic group.

Sponsor: American Physical Therapy Association

Method of Guideline Development: Not specified.

Patient Population: Patients with a wide variety of conditions including patients with hip fracture and stabilization with open reduction internal fixation (ORIF).

Setting: Not specified.

Major Recommendations:

1. The general prognosis for this group is that over the course of 1 to 12 months, the patient will return to premoribd or highest level of function.

2. The guideline states that the expected range of number of visits per episode of care will be 6 to 87 visits. Approximately 80 percent of patients in this diagnosis group will achieve their goals and outcomes within this time. However, a number of factors that may modify this projection are also given. These include: age, accessibility of resources, severity of condition, comorbidities, delayed healing, and pre-existing conditions among, other factors.

3. It also lists a variety of general goals. For example, a goal is that the patient's ability to perform physical tasks is increased or that the intensity of care needed is decreased.

4. The guideline lists a number of recommendations for possible interventions including therapeutic exercise and functional training (activities of daily living and instrumental activities of daily living training, and training on how to use assistive or adaptive equipment).

Citation: Cruise, Cathy M. and Kenneth J. Koval. "Rehabilitation of the Elderly." *Archives of the American Academy of Orthopaedic Surgeons.* vol. 2, no. 1, Winter 1998, pp. 103-107.

Objective: To describe to physicians, including orthopedic surgeons, the information they need to assess the functional abilities of their elderly patients, judge the patient's needs for rehabilitation, and match these needs to the most appropriate resources.

Group Authoring Guideline: American Academy of Orthopaedic Surgeons

Year Written: 1998

Method of Guideline Development: Not specified.

Patient Population: Elderly patients undergoing orthopedic surgery.

Setting: Not specified.

Major Recommendations:

In addition to treating the underlying condition, it is important to prevent secondary disabilities and to allow the elderly to adapt in a positive way to persisting impairments.

Decreased short-term memory and decreased rate of central information processing should not be misinterpreted as poor motivation for the rehabilitation program. The reduced speed of motor activities and the decreased coordination and balance that often accompany aging may necessitate specific safety precautions.

Therapy programs should be scheduled during the part of the day when the patient is most productive and should allow for adequate rest periods, as sequential exercise sessions are often poorly tolerated. It is important to set realistic short-term and long-term goals and to monitor the elderly individual's progress in therapy, so that changes in the rehabilitation prescription can be made as needed.

An elderly patient may be faced with a variety of post-surgical conditions, including hypovolemia, hypotension, deep venous thrombosis, arrhythmias, tachypnea, hypoxemia, respiratory acidosis, wound dehiscence, or infection, implant dislocation, iatrogenic fracture, fever, nosocomial infection, or acute changes in mental status. Any of these may decrease the patient's ability to participate in a rehabilitation program and may necessitate an extended hospital stay.

Patients are advised to ambulate with a walker or bilateral crutches for the first six weeks after hip replacement surgery and are then advanced to ambulation with one crutch or a cane.

In all cases, it should be stressed that the patient should ambulate whenever possible to maintain the current level of aerobic conditioning and muscle strength.

A standard wheelchair may not be appropriate for all patients; therefore, wheelchairs should be prescribed by clinicians who are familiar with the options available.

Subacute care units provide at least one hour of therapy a day. Skilled nursing facilities offer various degrees of rehabilitation for the elderly, ranging from little or no therapy to three hours of therapy a day.

The elderly often benefit from less intensive therapy programs in skilled nursing facilities or subacute units; patients may be placed in these types of facilities to build up strength before beginning a more intense acute inpatient program or to fine-tune skills learned in an acute rehabilitation program before discharge.

Citation: Platt, Janet V. "Occupational Therapy Practice Guidelines for Adults with Hip Fracture/Replacement." Bethesda, MD: American Occupation Therapy Association, Inc., 1999.

Objective: To provide an overview of occupational therapy interventions for hip fracture and replacement. The guideline define the evaluation and frequency and duration of treatment as well as patient care management.

Sponsor: American Occupational Therapy Association

Method of Guideline Development: Not specified.

Patient Population: Patients with hip fracture or hip replacement

Setting: Guideline contains recommendations for acute care, post-acute care, and home-based therapy.

Major Recommendations:

1. The setting for rehabilitative therapy will depend on the type and complexity of surgery, severity of any comorbid conditions, the level and number of services needed by the patient, and the ability of the patient's family members or caregiver to care for the patient.

2. The length of treatment depends upon the postsurgical precautions that must be maintained, presence or absence of comorbid conditions, environment in which the patient lives, and the patient's and family members' motivation toward independence.

3. Patients may require occupational therapy after acute care discharge because they are not independent or safe in performing activities of daily living (ADLs), including household or work tasks.

4. Lack of objective evidence of patient progress over one week of intensive rehabilitation or over two weeks in a less intense program may indicate that a functional plateau has been reached, or that the patient is not currently benefitting from skilled services. Unless there is a clear expectation for functional gains, a different level of care or discharge may be indicated. Services may be reinstated when a benefit in functional gains is expected.

5. Several factors will shape the intervention including postsurgical precaution. These usually include nonweight bearing to partial weight bearing for six weeks to six months and limited hip flexation, external rotation, abduction, adduction, extension, and internal rotation.

6. Postoperative pain and postoperative precautions lead to limitations in the patient`s ability to perform ADLs such as dressing, toileting, bathing, and overall mobility. Occupational therapy usually begins one to two days after surgery. Patients are taught compensatory techniques to learn self-care and mobility skills. Adaptive devices such as a toilet safety frame or a shower chair are available to assist patients with toileting and bathing while complying with postsurgical precautions.

7. The goal of therapy is to increase function in affected performance areas; however, treatment may focus on the performance component or the context of the affecting function. For example, if the goal is to improve functionality in dressing the treatment may focus on attention span, learning, and sequencing. The operationalization of this goal may be to have the patient dress independently using adaptive equipment to maintain proper hip alignment according to postsurgical precautions.

8. Patients with cognitive deficits may require a longer treatment program with additional follow-up teaching to ensure compliance with postsurgical precautions. These patients often have decreased short-term memory and an inability to learn new techniques. Because of the additional treatment required, these patients usually are followed in subacute units or nursing homes.

Citation: Wolf, Philip A., G. Pat Clagett, J. Donald Easton, Larry B. Goldstein, Philip B. Gorelick, Margaret Kelly-Hayes, Ralph L. Sacco, Jack P. Whisnant. "Preventing Ischemic Stroke in Patients with Prior Stroke and Transient Ischemic Attack." *Stroke*, vol. 30, 1999, pp. 1991-1994.

Objective: To provide recommendations as to the prevention of stroke in patients with prior stroke and transient ischemic attack (TIA).

Sponsor: American Heart Association

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature in addition to expert consensus where evidence was lacking.

Patient Population: Patients with prior stroke and TIA.

Setting: Unspecified.

Major Recommendations:

1. Patients recovering from a mild stroke or who have had a recent TIA are at higher risk of stroke recurrence, physical and intellectual disability, long-term institutionalization, and death.

2. The type of stroke will guide decision-making as to the type of preventive therapy.

3. Characteristics associated with a high risk of stroke or stroke recurrence includes: advanced age, male sex, and black or Hispanic race. Other risk factors are modifiable blood pressure, smoking, obesity, impaired glucose tolerance, physical inactivity, high total and low-density lipoprotein (LDL) cholesterol, and elevated plasma homocysteine levels.

4. There are three treatment strategies to prevent recurrent stroke in patients with TIA or mild ischemic stroke. For patients with atrial fibrillation, dose-adjusted warfarin sodium is administered (international normalized ratio [INR] in the 2 to 3 range; target 2.5) unless there is a specific contraindication for that medication. In which case, the patient should be treated with aspirin 50 to 325 mg/day.

5. In patients with TIA or mild stroke and symptoms referable to severe (70 to 99 percent) carotid artery stenosis (or to moderate [50 to 69 percent] stenosis in a patient with significant risk factors), the treatment of choice is carotid endarterectomy by a surgeon with a low complication rate (morbidity and mortality of 6 percent). For patients with TIA or mild stroke who do not have atrial fibrillation or moderate-to-severe carotid stenosis, treatment with a daily dose of 50 to 325 mg of aspirin is of demonstrated benefit.

6. For patients with stroke and known coronary artery disease, the use of a statin drug to reduce LDL is also indicated. Statin use in stroke patients without prior coronary artery disease may also reduce the risk of stroke recurrence, as well as myocardial infarction and other vascular disease, but this had not been demonstrated.

Citation: American Heart Association. "Supplement to the Guidelines for the Management of Transient Ischemic Attacks." Dallas, TX: American Heart Association, 1999.

Objective: To provide an update to the previous guidelines on the management of transient ischemic attacks (TIAs) based on new advances in medical and surgical therapy for patients with TIA and new information on risk factors.

Sponsor: American Heart Association

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature in addition to expert consensus where evidence was lacking.

Patient Population: Patients with TIA.

Setting: Unspecified.

Major Recommendations:

Risk Factor Management

1. After thorough evaluation to determine the cause of the TIA, hypertension should be treated to maintain systolic blood pressure below 140 mmHg and diastolic blood pressure below 90 mmHg. For persons with diabetes, blood pressure levels below 130/85 mmHg are recommended.

2. Cigarette smoking should be discontinued.

3. Coronary artery disease, cardiac arrhythmias, congestive heart failure, and valvular heart disease should be treated appropriately.

4. Excessive use of alcohol should be eliminated. Mild to moderate use of alcohol has been associated with a reduction in stroke rates.

5. Treatment of hyperlipidemia is recommended.

6. Fasting blood glucose levels less than 126 mg/dL are recommended.

7. Physical activity is recommended.

8. Discontinuation of postmenopausal estrogen replacement therapy is recommended.

Medical Therapy

1. Patients who have had an atherothrombotic TIA should receive daily therapy with an antiplatelet agent to reduce the risk of recurrent stroke.

2. Anticoagulant therapy is not routinely recommended for patients with atherothrombotic TIAs, as either short- or long-term therapy. At anticoagulation intensities of INR (International Normalized Ratio) of 3.0 to 4.5, the risk of brain hemorrhage outweighs the potential benefits. Therefore, if oral anticoagulants are used for atherothrombotic TIA patients, a target INR of less than 3.0 is recommended.

3. Long-term oral anticoagulation is recommended for patients with atrial fibrillation who have a TIA. An INR of 2.5 (range 2.0 to 3.0) is recommended.

Surgical Management

1. Carotid endarterectomy is indicated for patients with significant carotid artery stenosis and one or more recent TIAs or minor strokes.

2. Patients with less than 50 percent stenosis of the carotid artery and recent symptoms of cerebral ischemia do not benefit from carotid endarterectomy and should be given antiplatelet therapy.

3. Extracranical-intracranial bypass is not recommended for patients with TIAs. A subgroup of patients with anterior circulation ischemia unresponsive to medical therapy with hemodynamic disturbances may benefit from bypass surgery.

4. Surgical or endovascular therapy may be appropriate for patients with significant vertebrobasilar stenosis who have continued symptoms referable to the posterior circulation despite medical therapy.

Citation: American College of Chest Physicians. "ACCP Consensus Conference on Antithrombotic Therapy." *Chest*, vol. 114, No. 5 Suppl., November 1998, pp. 439S-769S.

Objective: To provide recommendations on antithrombotic therapy for a variety of clinical conditions.

Sponsor: American College of Chest Physicians

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature, in addition to expert consensus where evidence was lacking.

Patient Population: Several different categories of patients are addressed including those with coronary artery disease (acute myocardial infarction; stable and unstable angina), ischemic stroke, saphenous vein or internal mammary artery bypass grafts, atrial fibrillation, and patients who are at risk for venous thromboembolism (surgical patients, patients with spinal cord injury, trauma patients).

Setting: Acute inpatient and post-acute settings.

Major Recommendations:

In patients with Acute Myocardial Infarction (AMI):

1. Patients who are at high risk for systemic or venous thromboembolism and who have received rtPA (recombinant tissue plasminogen activator) or reteplase should continue anticoagulant therapy with warfarin (goal international normalized ratio [INR] 2.5; range 2.0 to 3.0) for up to three months after the initial event. Patients with atrial fibrillation should receive continuous warfarin therapy.

2. Patients who have not received thrombolytic therapy should receive low dose heparin therapy (7,500 U SC q12h) until ambulatory, unless a specific contraindication exists.

3. Patients who have not recieved thrombolytic therapy and who are at increased risk for systemic or pulmonary embolism should also continue anticoagulant therapy with warfarin (goal international normalized ratio [INR] 2.5; range 2.0 to 3.0) for up to three months after the initial event. Patients with atrial fibrillation should receive continuous warfarin therapy.

4. Every patient with AMI should receive not less than low dose unfractionated heparin (7,500vsc bid) or low molecular-weight heparin (LMWH) until fully ambulatory.

5. Patients who are to receive heparin should be given aspirin cojointly. If warfarin therapy is begun, aspirin should be discontinued, then restarted after warfarin therapy is over, and maintained indefinitely. Aspirin should not be given with warfarin except in

situations of very high embolic risk or previous failure of either drug used alone. For long-term therapy, aspirin is recommended if embolic risk is low, and warfarin if it is high.

6. If aspirin is contraindicated, clopidogrel or warfarin may be considered. Some patients with recurrent ischemic episodes after myocardial infarction may benefit from aspirin with low-intensity warfarin (INR about 2.0).

7. Neither sulfinpyrazone nor dipyridamole (alone or with aspirin) is recommended after AMI.

8. Patients with unstable angina should be given aspirin (160 to 325 mg/d). Treatment should continue indefinitely.

9. All patients with stable angina or clinical or laboratory evidence of coronary artery disease (CAD) should take aspirin (160 to 325 mg/d) indefinitely.

In ischemic stroke:

1. In patients with ischemic stroke, there is a need to reduce the risk of deep vein thrombosis (DVT) and pulmonary embolism (PE). It is strongly recommended that acute stroke patients with restricted mobility be treated prophylactically with low-dose subcutaneous heparin, LMWH, or heparinoids. If anticoagulant therapy is contraindicated, use of intermittent pneumatic compression (IPC) devices is recommended.

2. Every patient who has had an atherothrombotic (noncardioembolic) stroke or transient ischemic attack (TIA) should receive an antiplatelet agent regularly, unless contraindicated, to reduce the risk of recurrent stroke and other vascular events.

3. Long-term oral anticoagulation therapy is strongly recommended for stroke prevention in atrial fibrillation patients after recent stroke or TIA.

In atrial fibrillation (AF):

1. Oral anticoagulation markedly decreases the risk of ischemic stroke in patients with AF. Aspirin also does this but to a much lesser extent.

2. Long-term anticoagulant therapy should be strongly considered for all AF patients at high risk of stroke.

In prevention of venous thromboembolism:

1. It is recommended that aspirin not be used prophylactically in general surgery patients, because other measures are more efficacious.

2. In higher-risk general surgery patients: low-dose unfractionated heparin or higher-dosage LMWH.

3. In higher-risk general surgery patients prone to wound complications e.g., hematomas, and infection: intermittent pneumatic compression is an alternative.

4. Very high-risk general surgery patient with multiple risk factors: low-dose unfractionated heparin or LMWH combined with IPC.

5. Patients undergoing total hip replacement: LMWH started 12 to 24 hours after surgery or warfarin started before or immediately after surgery or adjusted-dose heparin started preoperatively. Possible adjuvant use of elastic stockings or IPCs is recommended.

6. Patients undergoing total knee replacement surgery: LMWH, warfarin, or IPC.

7. Patients undergoing hip fracture surgery: LMWH or warfarin started preoperatively or immediately after surgery.

Citation: American Heart Association. "American Heart Association Prevention Conference IV: Prevention and Rehabilitation of Stroke." *Circulation*, vol. 96, 1997, pp. 701-707.

Objective: To provide recommendations for clinical practice, public policy, education, and research regarding the prevention and rehabilitation of stroke.

Sponsor: American Heart Association

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature in addition to expert consensus where evidence was lacking.

Patient Population: Patients with, and at risk for, stroke.

Setting: Unspecified.

Major Recommendations:

The conference adopted the recommendations of the Agency for Health Care Policy and Research's Post-Stroke Rehabilitation Clinical Practice Guideline. In addition, they made several recommendations regarding access to and cost-effectiveness of stroke rehabilitation:

1. The effective delivery of poststroke rehabilitation requires development of an integrated care system that spans acute care, acute rehabilitation, subacute rehabilitation, outpatient services, home care, and community support services. Important developments for this are use of clinical pathways, effective information systems, and communication between levels and sites of care. Barriers that limit access to postacute stroke rehabilitation include uneven distribution of resources, inadequate insurance coverage, and lack of knowledge of the potential value of rehabilitation.

2. Important issues in cost-effectiveness in rehabilitation are selection of patients most likely to benefit, and selection of the most appropriate setting, timing, and duration and intensity of the process. Patient-valued outcomes such as functional ability, life satisfaction, quality of life, and minimal burden on family and society should also be considered.

3. The relevant cost of postacute care includes but is not limited to the direct cost of rehabilitation. Recurrence, complications of treatment, and long-term care costs are also important, as are the indirect cost of impact on caregivers and losses of economic productivity of the patient and caregiver. Recovery from stroke occurs over a prolonged period of time. Therefore, both the effectiveness of rehabilitation and the total cost must be measured over the entire episode of care.

Citation: U.S. Department of Health and Human Services. Clinical Practice Guideline Number 16. *Post-Stroke Rehabilitation.* Rockville, MD: Agency for Health Care Policy and Research, May 1995.

Objective: To reduce practice variations in the care of persons suffering a stroke, and to encourage better documentation of the benefits of rehabilitation services.,

Sponsor: Agency for Health Care Policy and Research

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature in addition to expert consensus where evidence was lacking.

Patient Population: Guideline focuses on the patient with a first stroke who has developed hemiparesis with or without other neurological impairments.

Setting: Recommendations refer to each stage of recovery, from the acute hospitalization through subsequent rehabilitation and return to a community residence.

Major Recommendations:

1. Screening for possible admission to a stroke rehabilitation program should be performed as soon as the patient's neurological and medical condition permits. The individuals performing the screening examination should be experienced in stroke rehabilitation and preferably should have no direct financial interest in the referral decision. All screening information should be summarized in the acute medical records and provided to the rehabilitation setting at the time of referral.

2. Rehabilitation programs in nursing facilities vary widely in their capabilities. Traditionally, nursing homes have provided supportive care and low-level rehabilitation services. More recently, however, some nursing facilities have developed coordinated rehabilitation programs that are similar to, though usually less intensive than, hospital programs. Physician coverage in nursing facilities varies.

3. A threshold criterion for admission to any rehabilitation program is defined as the ability to sit supported for at least one hour and at least some ability to participate actively in rehabilitation interventions. Additional criteria include: (1) patient is medically stable or moderately stable, (2) patient has one or more persistent disabilities, and (3) patient is able to learn.

4. For patients who meet the threshold criteria, the selection of a setting will depend on the patient's medical stability, level of function, mental status, physical activity endurance, the adequacy of support by family or involved others, the adequacy of the living environment, and the capabilities of rehabilitation facilities in the community.

5. Discharge from a rehabilitation program should occur when reasonable treatment goals are achieved. Absence of progress on two successive evaluations should lead to reconsideration of the treatment regimen or the appropriateness of the current setting. Evaluation should be done weekly in an intensive program and bi-weekly in a less intensive program.

6. Recommendations on managing rehabilitation may apply to any setting and include:

   - The patient should be assessed within three working days of admission to an intensive program, and within seven days of admission to a lower intensity nursing facility program.

   - Rehabilitation goals should be set and a rehabilitation management plan should be developed.

   - Patient progress should be monitored weekly in an intensive program, and bi-weekly in lower intensity programs.

   - Nutrition, hydration, and skin integrity should be maintained. Dysphagia and bowel and bladder function should be managed.

   - Sensory motor deficits should be managed.

   - Occupational therapy should be provided where necessary, in addition to speech and language therapy.

   - Cognitive and perceptual deficits should be managed, and depression should be diagnosed and treated.[1]

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[1] Figure 5 on pages 80 and 81 provides an algorithm for selection of a rehabilitation setting.

Citation: U.S. Department of Health and Human Services. Clinical Practice Guideline number 11. *Heart Failure: Evaluation and Care of Patients with Left-Ventricular Systolic Dysfunction.* Rockville, Maryland: Agency for Health Care Policy and Research, June 1994.

Objective: To describe the range of diagnostic and management strategies that the guideline panel considered appropriate for patients with left-ventricular systolic dysfunction.

Sponsor: Agency for Health Care Policy and Research

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature in addition to expert consensus where evidence was lacking.

Patient Population: Adult heart failure patients with left-ventricular systolic dysfunction.

Setting: Unspecified.

Major Recommendations:

1. Asymptomatic patients who are found to have moderately or severely reduced left-ventricular systolic dysfunction (ejection fraction [EF] <35-40 percent) should be treated with an angiotensin-converting enzyme (ACE) inhibitor to reduce the chance of developing clinical heart failure.

2. All patients who complain of paroxysmal nocturnal dyspnea, orthopnea, or new-onset dyspena on exertion should undergo evaluation for heart failure unless history and physical examination clearly indicate a noncardiac cause for their symptoms, such as severe pulmonary disease.

3. Presence or suspicion of heart failure and any of the following findings usually indicates a need for hospitalization: (1) clinical or ECG evidence of acute myocardial ischemia, (2) pulmonary edema or severe respiratory distress, (3) oxygen saturation below 90 percent (not due to pulmonary disease), (4) severe complicating medical illness (pneumonia), (5) anasarca, (6) heart failure refractory to outpatient therapy, or (7) inadequate social support for outpatient management.

4. After a diagnosis of heart failure is established, all patients should be counseled regarding the nature of heart failure, drug regimens, dietary restrictions, symptoms of worsening heart failure, what to do if these symptoms occur, and prognosis.

5. Dietary sodium should be restricted to as close to 2 grams per day as possible. In no case should sodium intake exceed 3 grams daily.

6. It is vital that patients receive accurate information concerning prognosis in order to make decisions and plans for the future. Practitioners should discuss patients' desires

regarding resuscitation, and all patients should be encouraged to complete a durable power of attorney for health care or another form of advance directive.

7. Because noncompliance is a major cause of morbidity and unnecessary hospital admissions in patients with heart failure, educational programs or support groups should be a routine part of the care of patients with heart failure.

8. Patients with heart failure due to left-ventricular systolic dysfunction should be given a trial of ACE inhibitors unless specific contraindications exist. Patients with systolic blood pressure less than 90 mmHg have a higher risk of complications and should be managed by a physician experienced in utilizing ACE inhibitors in such patients. Caution and close monitoring are also required for patients who have a serum creatinine greater than 3.0 mg/dL or an estimated creatinine clearance of less than 30 mL/min; half of the ususal dose should be used in this setting.

9. ACE inhibitors may be considered as sole therapy in the subset of heart failure patients who present with fatigue or mild dyspnea on exertion and who do not have any other signs or symptoms of volume overload. Diuretics should be added if symptoms persist.

10. A combination of isosorbide dinitrate and hydralazine is an appropriate alternative in patients with contraindications or intolerance to ACE inhibitors.

11. Digoxin can prevent clinical deterioration in patients with heart failure due to left-ventricular systolic dysfunction, although its effect on exercise and mortality is not clear. Digoxin should be used routinely in patients with severe heart failure and should be added to the medical regimen of patients with mild or moderate heart failure who remain symptomatic after optimal management with ACE inhibitors and diuretics.

12. Routine anticoagulation is not recommended. Patients with a history of systemic or pulmonary embolism, recent atrial fibrillation, or mobile left-ventricular thrombi should be anticoagulated to a prothrombin time ratio of 1.2 to 1.8 times each laboratory control time (International Normalized Ratio 2.0-3.0).

13. The routine use of invasive or noninvasive tests, such as echocardiography or maximal exercise testing for patient monitoring is not recommended.

Citation: American Medical Directors Association. "Heart failure." American Medical Directors Association. Columbia, MD, 1996.

Objective: To summarize the steps involved in addressing heart failure, including recognition, diagnosis, management, and monitoring.

Sponsor: The American Medical Directors Association

Method of Guideline Development: The guideline is based on the U.S. Agency for Health Care Policy and Research's 1994 guideline (*Heart Failure: Evaluation and Care of Patients with Left-Ventricular Systolic Dysfunction.* Rockville [MD]: U.S. Department of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research; June 1994, p.122 [Clinical practice guideline; no. 11]). Recommendations are adapted to focus on application to the long-term care institutional setting.

Major Recommendations:

1. The medical record, plan of care, transfer summary, and other referral data should be used to help identify patients with heart failure.

2. The patient should be evaluated for signs and symptoms of heart failure including: tachycardia, third heart sound, increased jugular venous pressure, positive hepatojugular reflux, bilateral rales, peripheral edema not due to venous insufficiency, laterally displaced apical impulses, and weight gain. Other symptoms highly suggestive of heart failure include: dyspnea on exertion, dyspnea at rest, orthopnea, paroxysmal nocturnal dyspnea, fatigue, decreased exercise tolerance, or unexplained cough, especially at night. Symptoms that are less frequently due to heart failure include: acute confusional state-delirium, abdominal symptoms (nausea, abdominal pain or distention), decreased food intake, or decline in functional status.

3. The presence of risk factors and document findings in the medical record should be evaluated. Risk factors for heart failure include: coronary artery disease (angina or myocardial infarction), chronic hypertension, idiopathic dilated cardiomyopathy, valvular heart disease (mitral regurgitation, aortic stenosis), other cardiomyopathy (for example, sarcoidosis), arrhythmia (for example, atrial fibrillation), anemia, volume overload due to non cardiac reasons, or thyroid disease (hypo- or hyperthyroidism). If the patient has risk factors, treatment or a change in treatment should be determined.

4. The appropriateness of a workup should be determined. If a workup is determined to be appropriate an initial screening should be done to look for reversible etiologies of heart failure. Initial workup for reversible etiologies of heart failure should include a physical examination, blood work (complete blood count, electrolytes, thyroid-stimulating hormone, serum creatinine, urinalysis), chest x-ray, and electrocardiogram.

5. Patients with heart failure should be considered for an imaging study, such as an echocardiogram or radionuclide scan, if not previously performed, unless such a study is precluded by other factors. These imaging studies should determine whether systolic or diastolic dysfunction is dominant given that this information is imperative in selecting pharmacological management. If a reversible cause is detected, then decide if treatment is available, appropriate, and consistent with the patient's and family's wishes.

6. Volume overload, e.g., orthopnea, paroxysmal nocturnal dyspnea, peripheral edema, rales, and congestion on chest x-ray, due to retention of salt and water should be treated immediately with diuretics. Loop diuretics are usually necessary, followed by other treatment targeted at systolic and diastolic dysfunction. Monitor blood urea nitrogen, creatinine, and body weight in addition to changes in signs and symptoms, vital signs, functional performance, drug levels (e.g., digoxin), electrolytes, renal function, and magnesium.

7. The first line of treatment for systolic dysfunction is angiotensin-converting enzyme (ACE) inhibitors. Digoxin should be added in advanced heart failure to improve contractility in the presence of systolic dysfunction. Patients who cannot tolerate ACE inhibitors should be treated with direct vasodilation with long-acting nitrates and hydralazine in combination.

8. Diastolic dysfunction should be treated with diuretics, nitrates, calcium-channel blockers, beta blockers, or ACE inhibitors.

9. Non-pharmacological management should also be considered. This includes social service intervention; dietary consultation to maintain a low-salt diet; fluid restriction; resident/caregiver education; daily weight; symptom monitoring; and physical, occupational, and respiratory therapy.

10. Components of monitoring heart failure patients include: change in signs and symptoms, weights, vital signs, functional performance, drug levels where indicated, electrolytes, renal functions, and magnesium.

11. Patients without contraindications to revascularization should be advised of that possibility, including its potential benefits and harms.

12. If a patient remains significantly symptomatic on a combination of a diuretic, an ACE inhibitor, and digoxin, a consultation may be necessary with a practitioner who has specific expertise in the management of heart failure.

Citation: American Heart Association. "Guidelines for the Evaluation and Management of Heart Failure." American Heart Association Medical/Scientific Statement, 1995. www.americanheart.org/Scientific/statements/1995/21955555.html.

Objective: To discuss the diagnostic studies and treatment necessary to stabilize the status of adult patients with acute heart failure and the evaluation and treatment of patients presenting with chronic left ventricular dysfunction or stabilized acute heart failure.

Sponsor: American Heart Association

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature in addition to expert consensus where evidence was lacking.

Patient Population: Adult patients with heart failure associated with left-ventricular dysfunction, with the major focus on systolic dysfunction.

Setting: Unspecified.

Major Recommendations:

Systolic Dysfunction: Therapy

1. All patients with symptomatic heart failure and those in functional Class I with significantly reduced left ventricular function should be treated with an angiotensin-converting enzyme (ACE) inhibitor, unless contraindicated or not tolerated.

2. ACE inhibitors should be continued indefinitely.

3. The recommended dose of ACE inhibitors for heart failure are the larger doses used in the clinical trials demonstrating improvement in survival.

4. Patients with symptomatic heart failure should be treated with a diuretic drug, even when rendered free of edema. Diuretic drugs should be used in conjunction with an ACE inhibitor. The dose and type of diuretic drug may change according to fluid status but generally will be needed indefinitely.

5. Sodium restriction is a critical strategy in the treatment of patients with heart failure.

6. Calcium channel blockers are not of proven benefit for patients with systolic heart failure and may be harmful. Such risks may not accompany the use of amlodipine, which is undergoing further evaluation.

7. Digoxin is an effective treatment in many patients with moderate to severe heart failure, but there is uncertainty regarding its influence on mortality.

8. Asymptomatic arrhythmias should not be treated in patients with heart failure.

9. The results with beta-blockers for the treatment of heart failure are encouraging, but their use remains investigational pending full review of the available data. However, beta-blockers are indicated (if tolerated) in the treatment of high risk patients after an acute myocardial infarction.

10. Anticoagulation is indicated for patients with atrial fibrillation or previous embolization and is frequently administered in patients with a very low ejection fraction or intracardiac thrombus. However, there are few data to support its routine use for heart failure.

11. Low dose dobutamine or milrinone infusion may benefit selected patients with refractory heart failure. The infusion of low dose dobutamine on an outpatient basis may result in symptomatic improvement, but studies are needed to determine the effect on survival.

12. Dynamic exercise as tolerated should be encouraged.

Diastolic Dysfunction: Therapy

1. The goal of drug therapy in patients with diastolic dysfunction is to control symptoms by reducing ventricular filling pressure without reducing cardiac output.

2. Diuretic drugs and nitrates are the drugs of choice for symptomatic patients.

3. Calcium channel blockers, beta-blockers, and ACE inhibitors may be of benefit.

4. Agents with positive inotropic actions are not indicated if systolic function is normal.

Recommendations for Hospital Admission of Patients With Heart Failure:

Class I Recommendations (usually indicated; always acceptable)

1. Patients experiencing moderate to severe heart failure for the first time.

2. Patients with recurrent heart failure complicated by acutely threatening events or clinical situations (e.g., recent myocardial ischemia/infarction, acute pulmonary edema, hypotension, pulmonary or systemic embolus, symptomatic arrhythmias, or other severe medical illnesses).

Class II Recommendations (acceptable, but of uncertain efficacy and may be controversial)

1. Mild to moderate decompensation of chronic heart failure.

2. Patients experiencing mild heart failure for the first time.

Citation: Bartlett, John G., Robert F. Breiman, Lionel A. Mandell, and Thomas M. File, Jr. "Community-Acquired Pneumonia in Adults: Guidelines for Management." *Clinical Infectious Diseases*, vol. 26, April 1998, pp.811-838.

Objective: To present updated and expanded recommendations on the diagnosis and treatment of community-acquired pneumonia (CAP).

Sponsor: Infectious Diseases Society of America

Method of Guideline Development: Literature review and expert consensus.

Patient Population: Immunocompetent adults with CAP.

Setting: Unspecified (but contains recommendations for both inpatient and outpatient treatment).

Major Recommendations:

1. CAP occurs in patients who are not hospitalized or who have resided in a long-term care facility for ≥ 14 days before the onset of symptoms.

2. Risk factors for mortality include increased age, alcoholism, active malignancies, immunosupression, neurological disease, congestive heart failure, and diabetes. Prior pneumonia is also a risk factor.

3. The Pneumonia Patient Outcomes Research Team (PORT) developed a prediction rule that stratifies patients into five classes by using a cumulative point system. The PORT has suggested that the prognosis is sufficiently good in categories 1-3 to consider outpatient management, or outpatient management for categories 1 and 2 with a brief observational hospital stay for category 3. Patients in categories 4 and 5 would undergo a traditional hospitalization.

4. This guideline suggests that pneumonia should be suspected in patients with newly acquired lower respiratory symptoms (cough, sputum production, and/or dyspnea), especially if these symptoms are accompanied by fever, altered breath sounds, and rales. It is recognized that there must be a balance between reasonable diagnostic procedures and empirical therapy. The importance of establishing the diagnosis of pneumonia and its cause is heightened with the increasing concern for overuse of antibiotics.

5. The panel recommends that a chest radiograph be obtained for the routine evaluation of patients who are likely to have pneumonia. A chest radiograph is usually indicated to establish the diagnosis of pneumonia. The radiograph is occasionally useful for determining the etiologic diagnosis and the prognosis and for detecting alternative diagnoses or associated conditions. Clinicians may be tempted to treat patients for CAP on the basis of presenting manifestations, without radiographic confirmation to hold down costs. However, this approach should be discouraged, given the cost and potential dangers of antibiotic resistance and adverse side effects.

6. Laboratory studies that are helpful for determining the severity of the infection and the need for hospitalization include selected blood chemistries (i.e., glucose, blood urea nitrogen, and serum sodium levels) and pulse oximetry or arterial blood gas determinations.

7. Antibiotic treatment will depend upon the etiology of the infection. The guideline provides recommendations for treatment according to the type of pathogen.

Citation: Gershon, Anne A., Pierce Gardner, Georges Peter, Kristin Nichols, and Walter Orenstein. "Quality Standards for Immunization." *Clinical Infectious Diseases*, vol. 25, 1997, pp. 782-786.

Objective: To provide assistance to clinicians when making decisions on providing immunizations to healthy infants, children, and adults. Recommendations are presented as standards of care rather than a practice guideline due to the strength of evidence to support them.

Sponsor: Infectious Diseases Society of America

Method of Guideline Development: Summary of other recommendations developed by national organizations. Recommendations are evidence-based and were reviewed by panel members who were experts in adult and pediatric infectious diseases.

Setting: Unspecified.

Major Recommendations:

1. All adults age 65 or greater and younger individuals in high risk groups should receive annual influenza vaccinations. Persons at high risk include those with chronic cardiopulmonary disease, chronic metabolic diseases (including diabetes mellitus), chronic renal dysfunction, hemoglobinopathies, and immunosupression, as well as residents of long-term care facilities, providers of home health care or health care to high risk persons, and other individuals who wish to avoid influenza.
2. All adults age 65 or greater and younger individuals in high risk groups should receive the pneumococcal vaccine. Persons at risk include those with high risk conditions such as cardiopulmonary diseases, diabetes, alcoholism, chronic liver disease, chronic renal failure, or cerebrospinal fluid leaks, or immunocompromise due to conditions such as splenic dysfunction or asplenia, Hodgkin's disease, lymphoma, multiple myeloma, nephrotic syndrome, and organ transplantation.
3. Revaccination with pneumococcal vaccine should be considered for those who received the 14-valent vaccine or the 23-valent vaccine six years ago or more.

Citation: American Diabetes Association. "Translation of the Diabetes Nutrition Recommendation for Health Care Institutions." *Diabetes Care*, vol. 23, no. Supplement 1, January 2000, pp. S47-S50.

Objective: To provide recommendations on medical nutrition therapy (MNT) for the acute and long-term care settings.

Sponsor: American Diabetes Association

Method of Guideline Development: Literature review and expert opinion.

Patient Population: Diabetic patients in acute or long-term care settings.

Setting: Acute or long-term care.

Major Recommendations:

1. NT needs to be individualized and integrated into the patient's overall diabetes management plan. A multidisciplinary team approach should be used.

2. In long-term care facilities, residents with diabetes should be served the regular (unrestricted) menus, with consistent amounts of carbohydrates at meals and snacks.

3. Food should not be restricted to control blood glucose levels because of the risk of malnutrition.

4. Regular meals in long-term care institutions are generally consistent in calories, served at consistent times, and contain small portions of food.

5. Some residents may require more individualization. They may need blood glucose monitoring to evaluate the effectiveness of the nutrition plan. It may be more important to make medication changes than food adjustments.

Citation: Minneapolis/St. Paul Diabetes Educators. "Guidelines for Diabetes Care in Long-Term Care Facilities." Minneapolis, MN: Minneapolis/St. Paul Diabetes Educators, 2000.

Objective: To provide guidelines for the care and management of residents of long-term care facilities with diabetes. Specific goals are to: (1) prevent crises or suffering related to inadequate control of diabetes, and (2) prevent and treat complications of diabetes mellitus to preserve function and maintain optimal quality of life.

Sponsor: Minneapolis/St. Paul Diabetes Educators

Method of Guideline Development: Based on expert consensus.

Patient Population: Elderly

Setting: Long-term care facilities

Major Recommendations:

1. Diabetic patients in long-term care facilities should receive annual eye and visual examinations, or every two years if any of the following conditions are met: (1) resident is not taking insulin, (2) resident's hemoglobin A_{1c} is less than 8.0 percent, and (3) previous eye examination revealed no evidence of retinopathy.

2. Diabetic patients should have an annual dental examination.

3. Blood glucose should be monitored with the following frequency unless clinically inappropriate. During the first week of admission: four times daily (before meals and at bedtime) if taking insulin, twice daily (rotating times before mealtime and at bedtime) if treated with oral agents. Ongoing testing, once stabilized: twice daily rotating times before meals and at bedtime, if taking insulin and twice weekly rotating times before meals and at bedtime if taking oral agents. If the patient is being treated with medical nutritional therapy only, then blood glucose should be tested monthly or with a quarterly hemoglobin A_{1c}.

4. The frequency of blood glucose testing should be increased when more data is needed (such as during illness, surgery, stress, suspected hyperglycemia or hypoglycemia). Some individuals have asymptomatic hypoglycemia which is more difficult to diagnose unless glucose testing is done regularly.

5. The sites used for blood draws should be rotated to increase patient comfort.

6. Hemoglobin A_{1c} testing is recommended quarterly unless clinically inappropriate. The goal is a test result 1.0 to 1.5 percentage points above normal laboratory values or less, to reduce the frequency of diabetic eye disease, heart disease, neuropathy, nephropathy, and stroke.

7. When the results of blood glucose monitoring reveal a blood glucose level less than 80 mg/dL or the resident is symptomatic, treatment for hypoglycemia should begin immediately.

8. The nursing staff should notify the resident's primary care physician when blood glucose is consistently higher or lower than prescribed treatment parameters.

9. When the resident is ill, careful observation is needed to prevent severe hyperglycemia. Insulin or oral agents should generally be continued during periods of illness. If the resident if unable or unwilling to eat his or her usual diet, intake of fluids and normal carbohydrates should be encouraged. Vital signs should be checked at least once every shift. The resident's primary care physician should be contacted immediately if the resident is vomiting or unable to consume carbohydrate replacements for four hours, or if moderate to large ketones are present. If ketone testing is ordered, notify the primary care physician if moderate to large ketones are present.

10. Trained staff should examine the resident's legs and feet daily.

Citation: U.S. Department of Health and Human Services. Clinical Practice Guideline Number 2: *Urinary Incontinence in Adults: Acute and Chronic Management.* Rockville, Maryland: Agency for Health Care Policy and Research, March 1996 Update.

Objective: To improve reporting, diagnosis, and treatment of urinary incontinence; reduce variations in clinical practice; educate health care providers and consumers about this condition; and encourage further biomedical, clinical, and cost research on urinary incontinence.

Sponsor: Expert panel convened by the Agency for Health Care Policy and Research

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature in addition to expert consensus where evidence was lacking.

Patient Population: Guideline focuses on the patient with acquired intraurethral urinary incontinence.

Setting: Recommendations are applicable to ambulatory and nonambulatory patients in outpatient, inpatient, and long-term care settings.

Major Recommendations:

1. Prevalence of urinary incontinence in nursing homes is 39 percent at two weeks after admission and the incidence is 27 percent after one year in a nursing home.

2. In nursing homes, standardized comprehensive assessment and screening is needed upon admission, annually, and when there is a significant change in condition using the Minimum Data Set (MDS). If the MDS finds that the patient is incontinent or has an indwelling catheter, an assessment if performed using the urinary incontinence Resident Assessment Protocol (RAP).

3. The RAP guides nurses and physicians through the evaluation process to ascertain the cause, chronicity, and type of urinary incontinence experienced by the patient. A stress test and evaluation of postvoid residual volume are recommended and guidelines are provided for referral for additional evaluation.

4. The RAP does not include evaluation of daily voiding habits, or the frequency, volume, and circumstances of urinary incontinence episodes. Thus, an evaluation using bladder records should be added because it is often important to determine the frequency and severity of the incontinence episode to provide appropriate treatment.

5. A short trial is crucial to assessing responsiveness to a particular intervention such as bladder training.

6. The guideline provides some general recommendations applicable to any setting; however, most recommendations are for the primary care setting.

7. Assessment of the patient and the incontinence is needed. This should include: (1) history, (2) mental status evaluation, (3) functional assessment (mobility, manual dexterity), (4) environmental assessment, (5) social assessment, (6) bladder records, (7) physical examination, and (8) laboratory tests.

8. Treatment options include behavioral, pharmacologic, and surgical interventions. Generally, the first choice for treatment should be the options with the fewest risks for the patient. In most cases, this will be behavioral therapy.

9. Some patients, especially those who are in long-term care or who are home bound, will have chronic, untreatable urinary incontinence. These are often patients who have cognitive or physical impairments or who are incapable of learning or performing behavioral methods. Also, they may not be able to tolerate or may not benefit from pharmacologic or surgical interventions.

10. The care of persons with chronic urinary incontinence should include close attention to: toileting schedule, fluid and dietary intake, strategies to decrease urine loss at night, use of the most absorbent and skin-friendly products, and prevention and early treatment of skin breakdown.

Citation: U.S. Department of Health and Human Services. Clinical Practice Guideline Number 15: *Treatment of Pressure Ulcers*. Rockville, Maryland: Agency for Health Care Policy and Research, December 1994.

Objective: To recommend treatment for pressure ulcers with a focus on: (1) assessment of the patient and the pressure ulcer, (2) tissue load management, (3) ulcer care, (4) management of bacterial colonization and infection, (5) operative repair, and (6) education and quality improvement.

Sponsor: Expert panel convened by the Agency for Health Care Policy and Research.

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature in addition to expert consensus where evidence was lacking.

Patient Population: Adults with pressure ulcers.

Setting: Acute care, long-term care, rehabilitative care, geriatric, and home settings.

Major Recommendations:

Assessment:

1. Includes the location, size, and stage of the pressure ulcer as well as whether the ulcer has sinus tracts, undermining, tunneling, exudate, necrotic tissue, granulation tissue, or epithelialization. Pressure ulcers should be evaluated at least once a week, but deterioration in the patient or the pressure ulcer require more immediate reassessment and evaluation.

2. The assessment should also include the whole person with: (1) complete history and physical examination, (2) identification of complications and co-morbid conditions, (3) nutritional assessment, (4) an assessment of pain, (5) a psychosocial assessment, and (6) an evaluation of risks for additional pressure ulcers.

Managing Tissue Loads:

1. Positioning while in bed or chair should ensure that no donut devices are used; pressure on heels is relieved; head of bed at lowest possible elevation contact between bony prominences is prevented.

Ulcer care:

1. Debridement of necrotic tissue is needed. Wounds should be cleansed initially and at each dressing change. Antiseptic agents should be avoided; saline is safe and appropriate for most ulcers. Mechanical force when cleaning should be minimized.

2. A dressing that will keep the wound continuously moist should be selected. Electrical stimulation is the only adjunctive therapy that can be recommended at this time.

3. Most Stage II, III, and IV ulcers are colonized with bacteria, but few progress to clinical infection. Surgical repair should be considered for Stage III or IV ulcers that do not respond to optimal care.

Citation: American Medical Directors Association. "Depression." American Medical Directors Association. Columbia, Maryland, 1996.

Objective: To provide recommendations to selecting an antidepressant drug and to suggest the role of the consultant psychiatrist. This guideline should be used in conjunction with the Minimum Data Set (MDS) and the Resident Assessment Protocol (RAP).

Sponsor: American Medical Directors Association

Method of Guideline Development: Adapted from the Agency for Health Care Policy and Research's guideline on depression in primary care.

Patient Population: Residents of long-term care facilities.

Setting: Long-term care facilities.

Major Recommendations:

1. Recognition: Clinical staff personnel need to perform an assessment for history of depression and also for current signs and symptoms of depression. If there are no current signs or symptoms, an evaluation for depression risk factors should be performed. If there are no risk factors present, then periodically monitoring should be exercised.

2. Diagnosis: It should be decided whether a clinical evaluation would be helpful. Consider and treat other conditions that may mimic symptoms of depression. If the signs and symptoms of depression are present and the Geriatric Depression Scale (GDS), Cornell Scale for Depression in Dementia, or Center for Epidemiological Studies-Depression Scale (CES-D) is positive, the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria should be applied to strengthen the diagnosis of a major depression.

3. Treatment: The interdisciplinary team should develop a care plan. Consider psychotherapy as well as pharmacotherapy. Assess choice of drugs.

4. Monitoring: Document approaches, timetables, and outcome goals. Periodic monitoring should be exercised. Adjust treatment as necessary.

Citation: American Medical Directors Association. "Pharmacotherapy Companion to the Depression Clinical Practice Guideline." American Medical Directors Association. Columbia, Maryland, 1998.

Objective: To provide recommendations to selecting an antidepressant drug and to suggest the role of the consultant psychiatrist.

Sponsor: American Medical Directors Association

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature in addition to expert consensus where evidence was lacking.

Patient Population: Residents of long-term care facilities.

Setting: Long-term care facilities.

Major Recommendations:

1. Confirming the diagnosis and the need for pharmacotherapy: The clinical staff personnel needs to determine whether the patient actually meets the Diagnostic and Statistical Manual (DSM-IV) criteria for major depression. It should be determined whether the patient is taking any medications or has a medical condition that could be contributing to the depressive symptoms. Also, the clinician should determine whether the patient could benefit from drug therapy in addition to other approaches to depression.

2. Selecting, initiating, and titrating the drug: Has the patient been treated with antidepressant drugs in the past and how effective were they? Does the patient have absolute or relative contraindications to specific antidepressants? Have the patient's current medications been reviewed for potential interactions with an antidepressant? Has an appropriate starting dose been selected and has the initial titration schedule been written? What are the consequences of the drug selection for the facility? (is it in the formulary, are there laboratory services available to monitor it, is there adequate staff training and equipment?)

3. Monitoring outcomes: When and how will the clinician measure response to the antidepressant drug? Has there been a noticeable improvement in the target symptoms after four to six weeks on the current dose? on the optimal tolerated dose? How long should the patient who has no intolerable side effects remain on an antidepressant once treatment goals are met?

Citation: American Society of Anesthesiologists. "Practice Guidelines for Cancer Pain Management." *Anesthesiology*, vol. 84, no. 5, May 1996, pp. 1243-1257.

Objective: To provide recommendations for the evaluation and treatment of cancer pain.

Sponsor: American Society of Anesthesiologists, Task Force on Pain Management, Cancer Pain Section

Method of Guideline Development: Literature review, task force consensus, and input of consultants and experts.

Patient Population: All patients with cancer pain.

Setting: Setting not specified, but guideline for use by anesthesiologists and health care personnel who deliver care under the direct supervision of anesthesiologists.

Major Recommendations:

1. A knowledge of common pain syndromes is a prerequisite for conducting a cancer pain evaluation. Common pain syndromes include, but are not limited to bone metastases, abdominal (visceral) pain, neuropathic pain, and mucositis. A knowledge of oncologic emergencies is also required. A thorough knowledge of the modalities that can be employed in the treatment of painful crises is also necessary.

2. Reports of pain made by the patient should be the primary source of pain assessment and should take precedence, whenever possible, over inferences and observations made by others. For some age groups and population (the cognitively or developmentally impaired), external observation may be preferable.

3. The longitudinal monitoring of pain intensity should be based on rating scales that are easy to use and interpret.

4. Oral medications should be used as the first line approach in most patients when initiating analgesic therapy. Any proposed systemic regimen must be individualized for the patient, and inflexible reliance should not be placed on any standard mixture of medications and/or dosing regimens.

5. When pain is continuous or occurs frequently, medication generally should be administered around the clock with additional rescue doses available for breakthrough pain.

6. Adjuvant agents should be used as coanalgesics (for example, corticosteroids, antidepressants) or to treat adverse drug effects.

7. The simultaneous use of more than one nonsteroidal anti-inflammatory drug (NSAID) or the concomitant use of a NSAID with a glucocorticosteriod is not recommended because the risk of toxicity is increased, and additional analgesia is not achieved.

8. When analgesia with acceptable adverse effects is no longer attained with the oral route of administration or when oral administration is no longer viable (inability to swallow and/or absorb medication), an alternate systemic route of administration should be chosen. The enteral route should be used in patients with percutaneous feeding tubes and inability to swallow, as long as absorption still occurs.)

9. Use of an alternative route of administration, specifically rectal or transdermal, should be chosen before use of invasive therapies.

10. The subcutaneous route of administration should be used in (1) patients unable to swallow or absorb opioids who may benefit from a continuous infusion of opioid and (2) similar patients with dynamic pain states requiring frequent rescue doses for breakthrough pain.

11. Intramuscular injection is not recommended as either short- or long-term therapy for cancer pain management because of the attendant discomfort, variable blood concentration, and fluctuating levels of analgesia.

12. When adequate analgesia cannot be achieved or intolerable side effects occur with indirect methods of drug delivery, direct drug delivery systems should be considered.

13. Adverse effects should be promptly identified and assessed, and appropriate remedies should be offered. Opioids should not be withheld from cancer patients for fear of producing respiratory depression, tolerance, physical dependence, or addiction.

14. All patients with increased risk for constipation should receive prophylaxis.

15. The anesthesiologist should recognize that pharmacologic and neurolytic techniques may not be fully effective in controlling pain and that relaxation training, hypnosis, biofeedback, and behavior therapy are important adjuncts.

Citation: American Society of Anesthesiologists. "Practice Guidelines for Chronic Pain Management." *Anesthesiology*, vol. 86, no. 4, April 1997, pp. 995-1004.

Objective: The purpose of these guidelines are to : (1) optimize pain control, recognizing that a pain-free state may not be achievable, (2) minimize adverse outcomes and costs, (3) enhance functional abilities and physical and psychological well-being, and (4) enhance the quality of life for patients with chronic pain.

Sponsor: American Society of Anesthesiologists, Task Force on Pain Management, Chronic Pain Section

Method of Guideline Development: Literature review, task force consensus, and input of consultants and experts.

Patient Population: All patients with chronic pain.

Setting: Setting not specified, but guideline for use by anesthesiologists and health care personnel who deliver care under the direct supervision of anesthesiologists.

Major Recommendations:

1. Physicians who do an assessment for chronic pain should have a thorough understanding of chronic pain syndromes.

2. The assessment should begin with a comprehensive history and physical examination, and should include the patient's general medical condition and extent of current medical and surgical diagnoses. The evaluation should include a history and physical examination, psychosocial evaluation, impression and differential diagnosis, and a treatment plan.

3. Diagnostic evaluation is an essential addition to the history and physical examination in the evaluation of patients with chronic pain.

4. Neural blockade with local anesthetics, including somatic and autonomic blocks, may be useful in determining the site and etiology of chronic pain.

5. Anesthesiologists should provide appropriate counseling of the patient regarding the pain syndrome diagnosis, treatment options, rehabilitation, and follow-up goals.

6. Periodic monitoring of outcomes is needed along with maintenance of accurate and complete records of pain therapies.

7. Multiple modalities, such as the combined use of neural blockade, medication, or rehabilitative therapies should be considered when analgesia with acceptable side effects is no longer attained with single modalities.

8. Antidepressants are useful medications for the reduction of pain and improvement of sleep.

9. The adequacy of regional sympathetic blockage should be objectively assessed and recorded.

10. Local injection of corticosteroids by the anesthesiologist should be provided within the context of the patient's overall treatment plan.

11. An office or home trial of transcutaneous electrical nerve stimulation (TENS) should be considered as an early management option because of its low complexity and low risk.

12. Opioid therapy may be considered when analgesia provided by other modalities (for example, nonsteroidal anti-inflammatory drugs [NSAIDS], TENS) is no longer adequate to manage chronic pain.

13. Neuroablation should be preceded by confirmation of needle placement using local anesthetic, imaging, or electrical stimulation.

Citation: American Geriatrics Society. "The Management of Chronic Pain in Older Persons." Journal of the American Geriatrics Society. vol. 46, no. 5, May 1998, pp. 635-651.

Objective: To make recommendations on the diagnosis and treatment of chronic pain in older persons.

Sponsor: American Geriatrics Society (AGS) Panel on Chronic Pain in Older Persons

Method of Guideline Development: Based on evidence from the peer-reviewed literature in addition to expert consensus where evidence was lacking.

Patient Population: Elderly.

Setting: Applicable skilled nursing, long-term care, and outpatient settings.

Major Recommendations:

1. Pain should be an important part of each assessment of older patients; along with efforts to alleviate the underlying cause, pain itself should be aggressively treated.

2. Pain and its response to treatment should be objectively measured using a validated pain scale.

3. Nonsteroidal anti-inflammatory drugs (NSAIDs) should be used with caution. In older patients NSAIDs have significant side effects and are the most common cause of adverse drug reactions.

4. Acetaminophen is the drug of choice for relieving mild to moderate musculoskeletal pain.

5. Opioid analgesic drugs are effective for relieving moderate to severe pain.

6. Non-opioid analgesic medications may be appropriate for some patients with neuropathic pain and other chronic pain syndromes.

7. Nonpharmacologic approaches (e.g., patient and caregiver education, cognitive-behavioral therapy, exercises, etc.), used alone or in combination with appropriate pharmacologic strategies, should be an integral part of care plans for most chronic pain patients.

8. Referral to a multidisciplinary pain management center should be considered when pain management efforts do not meet the patient's or the health care provider's goals.

9. Regulatory agencies should review existing policies to enhance access to effective opioid analgesic drugs for older patients in pain.

10. Pain management education should be improved at all levels for all health care professionals.

Citation: American Medical Directors Association. "Chronic Pain Management in the Long-Term Care Setting." Columbia, MD: American Medical Directors Association, 1999.

Objective: To define the steps involved in addressing chronic pain in the long-term care (LTC) facility.

Sponsor: American Medical Directors Association

Method of Guideline Development: Based on evidence from the peer-reviewed scientific literature in addition to expert opinion where evidence was lacking.

Patient Population: Residents of long-term care facilities.

Setting: Long-term care facilities.

Major Recommendations:

1. Communication mechanisms must be used to convey information about a patient's pain to the appropriate staff. Facilities should consider using a common vocabulary to describe pain and standard pain assessment tools. Facilities should consider appointing a pain management coordinator or team with responsibility for ensuring that all patients are properly assessed for pain and that all patients who have pain receive effective treatment.

2. Nursing assistants and other direct caregiving staff should receive training in pain recognition. A coordinated, aggressive approach to pain management should be promoted throughout the facility.

3. Every patient should be assessed for pain systematically and regularly. The assessment should be conducted on admission to a long-term care facility, at each quarterly review, at any time that a change in the patient's condition prompts completion of the Minimum Data Set (MDS), and at any time that pain is suspected.

4. During the assessment, the care team should ask the patient whether they have pain. The team should look for evidence of nonspecific signs and symptoms that suggest the presence of pain including such things as frowning, grimacing, bracing, increasing or recurring restlessness, agitation, eating or sleeping poorly, vocalizations, or loss of function. These signs and symptoms often are subtle and may be noticed only after the patient has been observed for some time.

5. Provide interim treatment for chronic pain. A full diagnostic workup may not be appropriate if a patient's condition is terminal or if a diagnosis would not change the treatment plan.

6. The physician must take a medical history and perform a comprehensive physical examination. Particular attention should be paid to body regions and organ systems that appear to be contributing to the chronic pain. (For example, a complaint of abdominal pain requires examination of the abdominal, pelvic, and rectal regions.)

7. The medical history should include a review of existing diagnoses and conditions that may be causing or contributing to chronic pain. Additional or new information from the patient's family members and from other members of the interdisciplinary health care team that may suggest other diagnoses and conditions (for example, a dietitian's report of weight loss prior to admission, especially in a patient with cognitive impairment, should prompt a thorough examination of the oral cavity for the presence of painful lesions). A detailed review of the patient's current medications should be investigated.

8. On the basis of the specific findings of the comprehensive history and physical examination, the physician should perform laboratory, radiologic, and other diagnostic tests as necessary. The following additional tests may be ordered in certain circumstances: uric acid (if crystal-induced arthropathy is suspected), spine x-rays (if recurrent compression fractures are suspected), magnetic resonance imaging (if spinal stenosis is suspected).

9. Consultations should be obtained if necessary. Consider specialty consultations when the diagnoses or conditions contributing to chronic pain are still not clear. Specifically, consultation should be considered with a psychiatrist, orthopedist, or neurologist for suspected spinal stenosis, and with a rheumatologist for difficult arthritic conditions.

10. All patients with chronic noncancer pain should live in an environment that is as comforting and supportive as possible. It is essential to always try to treat chronic pain, even when health care practitioners cannot identify a specific cause for the pain.

11. The goals of pain treatment should be established and carried out with input from the patient or his or her advocate. Appropriate medications and complementary (nonpharmacologic) treatments for the patient's chronic pain should be prescribed. The general principles for prescribing pain-control medications in the long-term care setting are: (1) administer medication routinely (not PRN), (2) use the least invasive route of administration first, (3) begin with a low dose and titrate carefully until comfort is achieved, and (4) reassess and adjust dose frequently to optimize pain relief while monitoring and managing side effects.

12. The first choice of analgesic for patients who do not have liver disease and do not consume alcohol is acetaminophen.

13. Topical agents may provide additional relief for patients with both musculoskeletal and neuropathic pain. Those with neuropathic pain also may benefit from appropriate tricyclic antidepressants or anticonvulsants. If acetaminophen fails to provide relief, nonsteroidal anti-inflammatory drugs (NSAIDs) may be considered. Although these

drugs often work well for patients in the long-term care setting, they also present considerable risks.

14. The cyclooxygenase-2 (cox-2) inhibitors may be a useful addition to the pain relief arsenal. However, there is as yet too little experience with these agents in frail, elderly patients to comment on their use in the long-term care setting.

15. Tramadol, a centrally acting analgesic that is unrelated to opioids, may be the next agent added to acetaminophen or NSAIDs, either alone or in combination, to manage chronic pain when patients or their advocates wish to avoid opioids.

16. If maximizing the acetaminophen dosage fails to achieve pain relief, combining smaller doses of drugs from different classes may be effective. This approach may reduce the risk of the side effects associated with higher doses of a single medication. Close monitoring is important, however, when multiple medications are prescribed. Chronic use of the NSAIDS indomethacin, piroxicam, tolmetin, and meclofenamate is not recommended because of the frequency of significant side effects.

17. Clinical experience has shown that long-term use of opioids for pain relief does not cause loss of control, tolerance, or addictive behavior as once thought. Long-term use of opioids, unlike that of NSAIDs, appears to present no risks of systemic damage. Benzodiazepines may interact adversely with opioids. Reducing or eliminating the use of these drugs with opioids may minimize these adverse effects.

18. Concern about respiratory depression is not a valid reason for withholding opioid treatment from a patient with chronic pain that is unresponsive to other medications. Codeine, oxycodone, hydrocodone, morphine, and fentanyl are commonly used opioids. Regular dosing provides continuous pain relief, reduces drowsiness and transient respiratory depression, and reduces overall drug consumption. Patients starting opioid treatment must be placed on bowel regimens to avoid constipation.

19. Butorphanol, propoxyphene, meperidine, nalbuphine, and pentazocine are not recommended for treatment of chronic pain in long-term care patients.

20. There are several non-opioid drugs that are not classified as analgesics that may be helpful in managing chronic neuropathic pain. These include corticosteroids, antidepressants, anticonvulsants, anti-arrhythmics, local anesthetics, and other agents. In some patients, these medications may be the primary pharmacologic treatment for pain. Many of these drugs have high side-effect profiles in the elderly. They are often most effective when used for baseline pain management, supplemented by analgesics for breakthrough pain.

21. A wide range of physical and behavioral treatments often improve overall pain management when used in combination with appropriate drug regimens. Effective complementary therapies include: education, cognitive/behavioral therapy, and exercise.

22. Periodic re-evaluation of the patient's chronic pain is necessary. Treatment should be adjusted as necessary. Provide a referral to a pain specialist if a patient has chronic pain that does not respond to treatment. If a patient has co-existing chronic pain and a mood disorder that is unresponsive to standard therapy, consider referral to a psychiatrist experienced in the care of elderly patients.

APPENDIX F

LETTERS TO EXPERTS AND ORGANIZATIONS

MEdPAC Medicare
Payment Advisory
Commission

1730 K Street N.W. • Suite 800
Washington DC 20006
202-653-7220 • Fax 202-653-7238
Website: www.medpac.gov

Gail R. Wilensky, Ph.D., Chair
Joseph P. Newhouse, Ph.D., Vice Chair
Murray N. Ross, Ph.D., Executive Director

Dear

This letter is to invite your participation in a study examining access to care for patients requiring skilled nursing facility (SNF) care. This study, called *Clinically Based Indicators of Medicare Beneficiaries' Use of Needed SNF Care: Feasibility Analysis*, is sponsored by the Medicare Payment Advisory Commission (MedPAC) and is being conducted by Mathematica Policy Research, Inc. (MPR). The study's goal is to determine the feasibility of using administrative data, such as Medicare claims or Minimum Data Set information, to monitor Medicare beneficiaries' access and use of SNF care in a clinically meaningful way.

We would like to ask you to help by participating in a telephone interview. We would like to learn your thoughts and insights on how we might begin to think about access to SNF care and quality of SNF care, and whether these concepts can be measured or operationalized using administrative data. The interview should take at most 45 minutes and can be scheduled at a time that is convenient for you.

MedPAC is an independent federal body that advises the U.S. Congress on issues affecting the Medicare program. One of our major mandates is to assess the effects of the changes in Medicare payment policies in BBA 1997 on Medicare beneficiary access and quality of care. An area of particular interest for MedPAC is determining whether the prospective payment system (PPS) for skilled SNFs required by BBA 1997, and which began to be phased in on July 1, 1998, has led to changes in beneficiary access to SNF care. Concerns have been raised that SNF PPS may cause certain types of patients to experience reduced access to SNF services and/or a decline in the quality of care.

MPR is an independent, objective social policy research and analysis firm that conducts evaluations of public programs and demonstrations undertaken in the United States. Its clients include federal agencies, state and local governments, foundations, universities, professional associations, and businesses.

A member of the MPR research team will be calling you in the next few days to discuss your availability for the interview and to answer any questions you may have about the project. Additional information about MedPAC is available at its website at www.medpac.gov, and about MPR at www.mathematica-mpr.com. Thank you in advance for your help in this important study.

Sincerely,

Murray N. Ross, Ph.D.
Executive Director

MEDPAC
Medicare
Payment Advisory
Commission

Washington, DC 20006
202·653·7220 • Fax. 202·653·7238
Website: www.medpac.gov

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We would like to ask your organization to help, first, by recommending an expert or experts for us to interview over the telephone. We would like to learn the thoughts and insights of these experts on how we might begin to think about access to SNF care and quality of SNF care, and whether these concepts can be measured or operationalized using administrative data. We anticipate the interview to take at most 45 minutes, and it can be scheduled at a time that is convenient for the individuals you help us identify.

Second, we would like to know if your organization has developed, or is aware of clinical guidelines either for the admission of patients to SNF care, or for the care of patients already admitted to SNFs. Such guidelines may apply to all patients, or may be focused only on patients with certain medical conditions or surgical procedures. They may describe criteria for the types of patients that are appropriate to be discharged to SNF care from the acute inpatient hospital, and/or they may provide guidance in how patients should be treated once admitted to SNF care.

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A member of the MPR research team will be calling you in the next few days to discuss your recommendations for experts, to discuss possible clinical guidelines for SNF care, and to answer any questions you may have about the project. Additional information about MedPAC is available at its website at www.medpac.gov, and about MPR at www.mathematica-mpr.com. Thank you in advance for your help in this important study.

Sincerely,

Murray N. Ross, Ph.D.
Executive Director

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MEDPAC Medicare Payment Advisory Commission

1730 K Street, NW • Suite 800 • Washington, DC 20006
(202) 653-7220 • Fax: (202) 653-7238 • www.medpac.gov